

MOTOR AGE

JUNE 1945



A CHILTO PUBLICATION

Soft pressure does it

There's a big difference in expander-type rings. Some still stick to the old high pressure theory.

But Steel-Vent climbed to success on the soft pressure principle.

And—Soft Pressure and long life go hand-in-hand.

HASTINGS MANUFACTURING CO. • HASTINGS, MICH.
Hastings Mfg. of Canada Ltd., Toronto

SOFT PRESSURE DOES IT— IN REBORES, TOO

A service company, operating in the far west oil fields, says: "Our records show that we have reduced our operating cost from five to three cents per mile. We believe that Hastings Rings have given us longer motor life in our re-ring and rebore jobs and have therefore been instrumental in producing this cost reduction."

★ *It's a privilege to buy War Bonds*

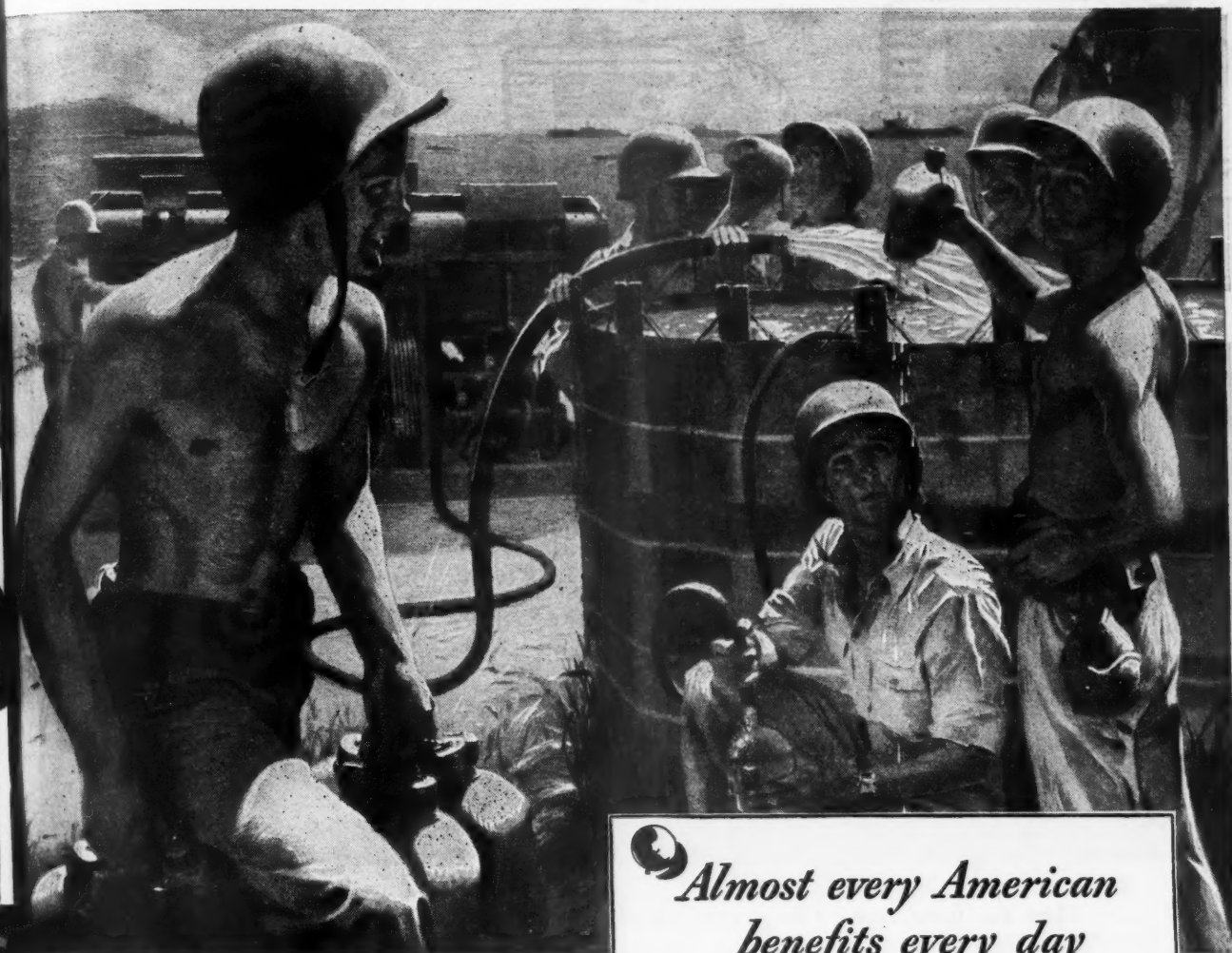


HASTINGS STEEL-VENT PISTON RINGS

U. S. PAT. 2,148,997

TOUGH ON OIL-PUMPING **GENTLE** ON CYLINDER WALLS

G. I. Joe makes salt water fresh!



**American ingenuity turns
the ocean into a well!**

*Almost every American
benefits every day
from the products of
BORG-WARNER*

As our forces advance in the Pacific they carry with them one of the most important tools of war—the now famous Cleaver-Brooks still. With it, the engineers turn the ocean and stagnant pools into wells of pure, sparkling drinking water!

A big problem has always been to transport the large amounts of fuel needed to distill sufficient quantities of water for troops at the front. So

the remarkable feature of these new portable “waterworks” lies in their fuel economy.

To help accomplish this saving, they're now equipped with a new type compressor, specifically designed for the job by Borg-Warner's B-W Supercharger Division. And they're delivering up to 175 pounds of pure water for every pound of gasoline they burn . . . compared to the old ratio of 37 pounds.

Normally, this Borg-Warner divi-

sion works to improve the performance of gasoline and diesel engines. Its assistance in cutting the cost of water purification is a perfect wartime example of Borg-Warner's quick adaptability to new problems of design and engineering.

Borg-Warner's basic principle, “design it better—make it better,” has long guided the production of many items of essential equipment now in daily use by almost every American.

These units form Borg-Warner: BORG & BECK • BORG-WARNER INTERNATIONAL • BORG WARNER SERVICE PARTS • B-W SUPERCHARGERS, INC. • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR STOVE • INGERSOLL STEEL & DISC • LONG MANUFACTURING • MARBON • MARVEL-SCHEBLER CARBURETOR • MECHANICS UNIVERSAL JOINT • MORSE CHAIN • NORGE • NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR

ENGINEERING
B-W
PRODUCTION



MEASURED BY TRACTORS...

Farm Journal is 25% BIGGER and MORE POWERFUL

Leading the next rural publication by more than half a million circulation, FARM JOURNAL is by far the largest rural magazine.

COMPARATIVE CIRCULATIONS, 1944*

FARM JOURNAL	2,526,873
Country Gentleman	2,014,062
Capper's Farmer	1,246,001
Successful Farming	1,135,099

*December, 1944, A. B. C. statement

Meet the farm money half way. Stock and display these products in your line which are advertised in current issues of the FARM JOURNAL.

A. C. SPARK PLUGS & FUEL PUMPS
ALCOA ALUMINUM
ALLIS-CHALMERS MEG. CO.
ARMCO STEEL
AUTO-LITE SPARK PLUGS
BORG-WARNER PRODUCTS
BOWES AUTOMOTIVE PRODUCTS
BRIGGS & STRATTON
GASOLINE ENGINES
BUICK
J. I. CASE EQUIPMENT
CASITE
CATERPILLAR DIESEL TRACTORS
CHAMPION SPARK PLUGS
CHEVROLET
CHEVROLET TRUCKS
CHRYSLER
JOHN DEERE FARM EQUIPMENT

DELCO BATTERIES
DODGE
DODGE TRUCKS
ETHYL
EXIDE BATTERIES
FAIRBANKS-MORSE MOTORS
FIRESTONE TIRES
FISHER BODIES
FORD-FERGUSON TRACTORS
FORD TRUCKS
FRAM OIL FILTERS
GENERAL ELECTRIC
G. M. DIESEL
G. M. TRUCKS
GOODRICH TIRES
GOODYEAR TIRES
HYATT ROLLER BEARINGS
INTERNATIONAL HARVESTER CO
LOOSITE

NASH
OLIVER FARM EQUIPMENT
PENNZOIL MOTOR OIL
PHILCO PRODUCTS
PLYMOUTH
RCA PRODUCTS
REPUBLIC STEEL
SOCONY VACUUM
SILOO
STUDEBAKER
TEXACO PRODUCTS
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UNITED STATES STEEL
VAN DER HORST PORUS-KROME
WESTINGHOUSE PRODUCTS
WILLARD STORAGE BATTERIES
WISCONSIN MOTOR CORP.
ZENITH RADIOS

Of the "Big Four" general magazines—Life, Saturday Evening Post, Collier's, FARM JOURNAL—FARM JOURNAL is the only one that covers the rural market.

GRAHAM PATTERSON, Publisher.
Washington Square, PHILADELPHIA 5

**FARM
JOURNAL**

PUBLIC LIBRARY

JUN 25 1945

For pressure-tight... leak-proof unions!

Pressure-tight and leak-proof assemblies are of vital importance to the efficiency and proper maintenance of trucks, buses, planes, tanks, tractors, boats, diesel engines, pumps, pipelines and industrial machinery.

Permatex Form-A-Gasket No. 1 . . .
Form-A-Gasket No. 2 . . . Aviation
Form-A-Gasket and Pipe Joint Cement
are as important as tools a mechanic
uses to do the right job on gasket
assemblies, flange unions, threaded
connections, pipe joints and many
other assemblies.

These Permatex sealing compounds are
leak-proof to gasoline, kerosene, fuel oil,
hot or cold lubricants, hot or cold water,
salt water, illuminating gas, ethylene
glycol, glycerine and numerous other
liquids and gases.

Permatex Form-A-Gasket No. 1 is a soft paste that
dries fast and sets hard.

Permatex Form-A-Gasket No. 2 is a soft paste that
dries slowly and remains pliable.

Permatex Aviation Form-A-Gasket is a heavy
liquid that does not dry and does not run. Readily
brushable and self-levelling.

Permatex Pipe Joint Cement is a heavy liquid that
does not dry or crack. Applied with a brush.
Permits easy readjustment. Disassembles readily.

PERMATEX COMPANY, INC.
Sheepshead Bay, N.Y., U.S.A.



JUNE, 1945

When writing to advertisers please mention Motor Age

3

MOTOR AGE, Vol. LXIV, No. 7. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries, \$2.00 per year. Canadian and foreign, \$3.00 per year; single copies, 25 cents.

"Mighty good prescription for better lube profits..."



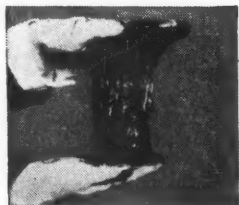
MARFAK gets 'em in and brings 'em back"

CAR OWNERS know that only the best in lubrication will keep their aging cars running for the duration. That's why more and more insist on Marfak, the special Texaco chassis lubricant that sticks to its job.

Alert dealers everywhere are cashing in on this demand — by offering Marfak and building a steady, profitable lube business.

Motorists learn about Marfak from the color ads in leading magazines — by listening to the popular Texaco Star Theatre radio program on Sunday nights — by recommendation of satisfied friends.

A simple demonstration shows them why Marfak is superior. Once they're sold, they stay sold and they become *regular* customers for Marfak lubrication and your other profitable items.



Talk to your Texaco man today — telephone the nearest of 2300 wholesale supply points — or write to The Texas Company, 135 E. 42nd Street, New York 17, N. Y.

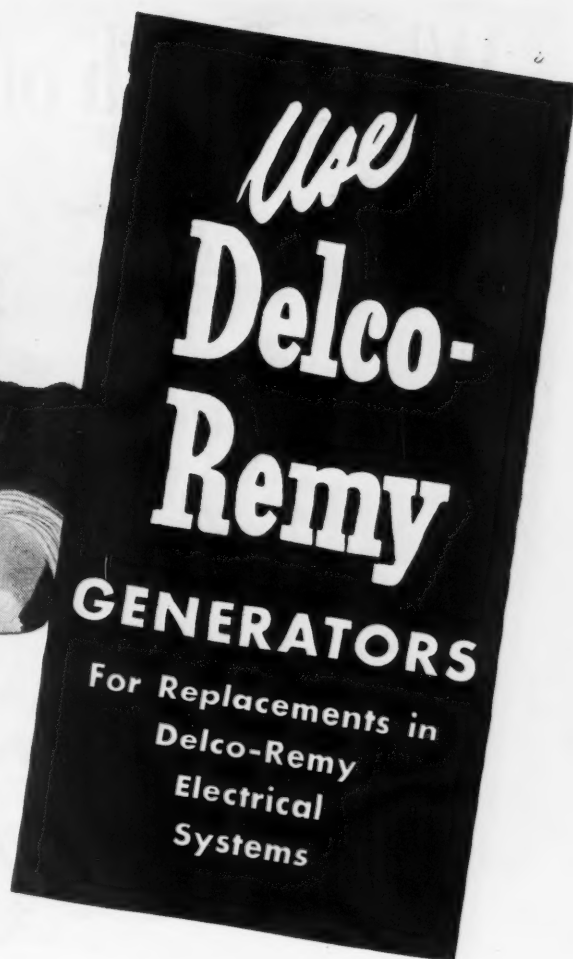
YOU CAN MAKE MORE

MONEY WITH MARFAK



Another "Bargain" Backfired When the Gold Turned Green!

There's no such thing as a "bargain" in poor workmanship and materials. When you buy from a reputable source at a fair price, you know what you're getting . . . whether it's jewelry or automotive parts and equipment.



When a Delco-Remy generator requires an overhaul or the replacement of major parts, the economical thing to do is replace it with a Delco-Remy exchange generator. Rebuilt generators are available for most car models on a liberal exchange plan.

Delco-Remy exchange generators, rebuilt by factory-controlled processes, insure the best in materials and workmanship—the use of original-equipment parts—the best materials for each part—and uncompromising inspection.

Maintain your reputation for top-grade service by using Delco-Remy original-equipment units in all Delco-Remy-equipped cars. Don't take chances with substitutes.



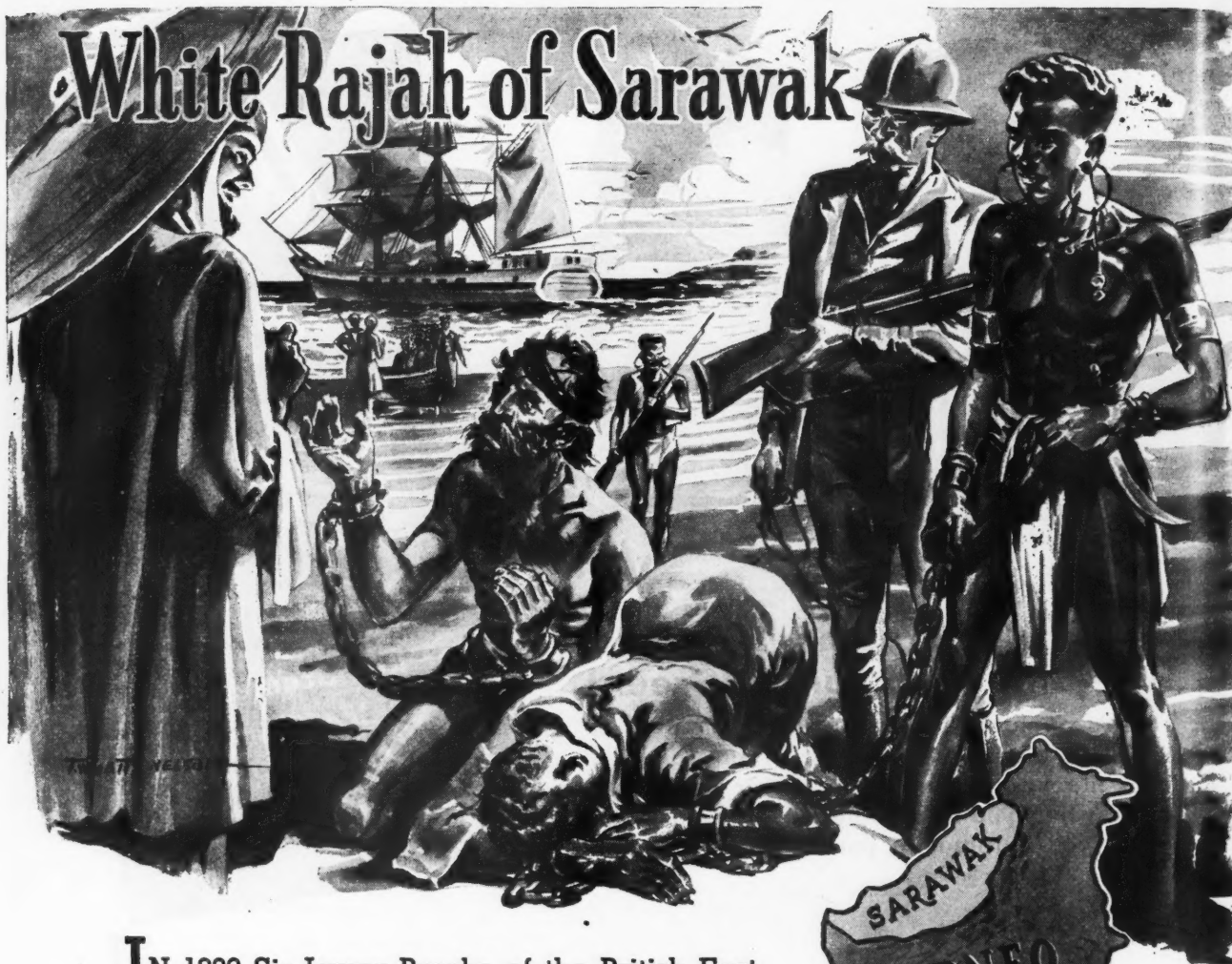
DELCO-REMY—A UNITED MOTORS LINE
Delco-Remy service parts and service information are distributed by United Motors Service through independent automotive wholesalers.



Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

KEEP BUYING WAR BONDS

WHEREVER WHEELS TURN OR PROPELLERS SPIN



IN 1839 Sir James Brooke of the British East India Service agreed to put down a formidable insurrection against the Sultan of Borneo. In return, he was to become Rajah of Sarawak. With a picked crew he sailed for the Sarawak coast, surprised and overcame the rebels and established himself as ruler of the Sarawak kingdom. Through his efforts head hunting and opium smuggling were suppressed and the southwest Pacific was cleared of pirates. The world benefited from this trade.

You too will make a beneficial trade when you let your Jobber exchange your ailing fuel pumps for

Factory Tested **AIRTEX**
Exchange **FUEL PUMPS**



"Your profits climb with the AIRTEX Line"

AIRTEX AUTOMOTIVE CORPORATION, FAIRFIELD, ILL.



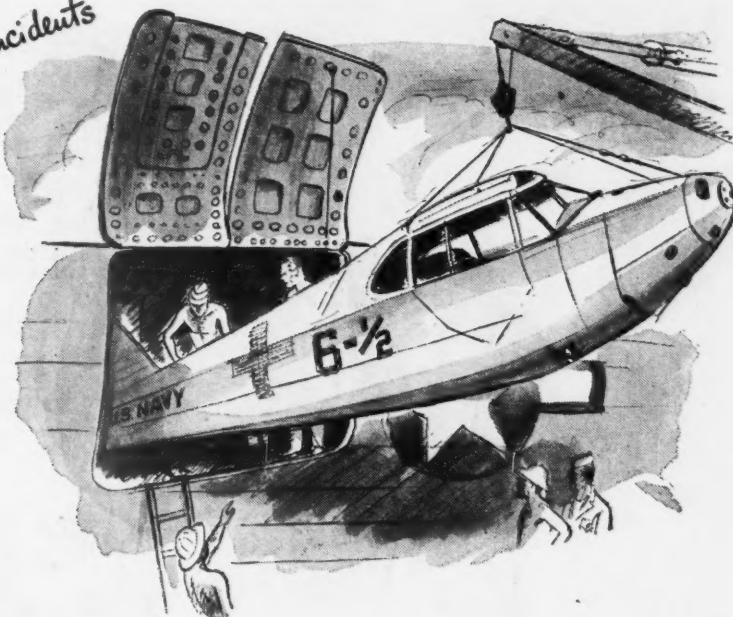
Assembled with
AIRTEX
Diaphragms
Guaranteed for
50,000 Miles



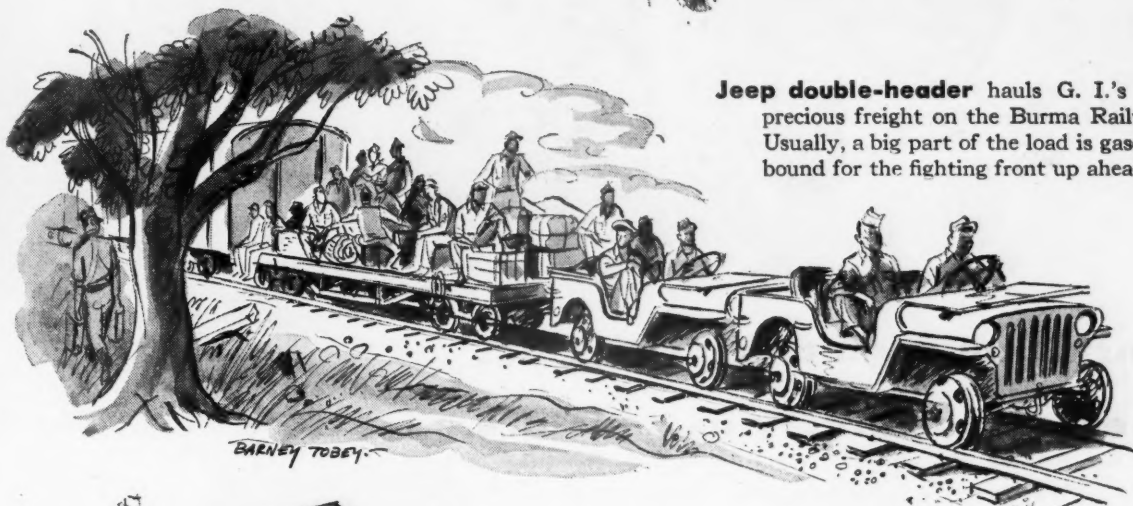
THE BEST GASOLINE IS STILL FIGHTING !

*Rough impressions
of gasoline's role on the
battle-fronts - based on actual incidents
and official photos,*

A Curtiss Commando carries
Cub hospital planes two at
a time, kangaroo-style. To
fly this load, plus a ton of
priority equipment, high
octane gasoline is essential.



Jeep double-header hauls G. I.'s and
precious freight on the Burma Railway.
Usually, a big part of the load is gasoline
bound for the fighting front up ahead.



Navy boats don't always ride the waves. This
one, for example, goes overland on the sturdy
back of an Army truck. Ashore or afloat, mecha-
nized equipment in this war needs gasoline of
the finest quality and plenty of it.



KNOCKING OUT a tough enemy is a job that
takes men, machines and supplies — including
huge quantities of the best gasoline that Ameri-
can refiners can produce—gasoline improved
with Ethyl fluid.

So long as the best gasoline "is still fighting,"
gasoline allotted for civilian use must be restricted
as to quality as well as quantity. Lessened mili-
tary needs may ease the situation a bit, but the
lifting of all restrictions cannot be expected un-
til complete, final Victory.

ETHYL
CORPORATION
CHRYSLER BUILDING
NEW YORK 17, N. Y.



Ethyl is a trade mark name

*It's what goes on **INSIDE** that counts*



**Inside an engine, Pedrick rings
perform as pretty as a picture**

IN PHOTOGRAPHY, if you don't start with a good *negative*, you can't possibly get a good print. So it is with piston rings. The *casting* must be absolutely right. No amount of precision machining or design changes can correct a poor casting.

A piston-ring casting is in a class by itself. It must meet the most complex requirements . . . must be checked and re-checked by precision tests and controls. Nowhere in Pedrick's whole manufacturing operation is it more true that "It's What Goes on **INSIDE** That Counts" than in Pedrick's foundry laboratory, cupolas, and molds!

Our unremitting effort always to start Pedrick *precisioneered* rings on their way with the very best of castings is another reason for the stand-out performance and long life of Pedricks in every kind of service.

Use them in *guaranteed* Engineered Sets for reconditioning automobile, truck, and tractor engines. You'll find they give your customers excellent service, delivering more power with greater gas and oil savings. WILKENING MANUFACTURING CO., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada), Ltd., Toronto.

Pedrick
precisioneered **PISTON RINGS**

KEEP ON BUYING WAR BONDS
... AND KEEP THEM!

TO MAKE CARS LAST, PUT QUALITY FIRST..

..OR ELSE!



CARE WILL KEEP THEM ON THE ROAD

Tired, overworked vehicles must stand up until the war is over. Apply that ounce-of-prevention rule . . . preventive maintenance . . . while there is still time. It's the serviceman's responsibility to keep essential transportation on the road.

Save critical batteries by maintaining the charging-rate at proper output. Recharge thoroughly when gravity reads below 1.225. Keep terminals greased. Check each cell. Keep water at proper level. Pay particular attention to ground-wire and connections. Make sure hold-down is tight.

Inspect generator for charging-rate, examine belt, and see that regulators operate properly. A good

battery starts quicker, saves gas. Keep it good!

Brakes are equally important. They are the control-center of every vehicle in motion. Your Grey-Rock jobber has the latest brake-servicing information, including National Safety Council standards, to make your job easier, surer. Call on him for Grey-Rock quality balanced linings and get safe, sure stops with longer wear. *See him, too, for all other quality parts and services.*

Never forget the rule: To make 'em *last*, put quality *first*. UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

ESSENTIAL PRODUCTS FOR ESSENTIAL TRANSPORTATION



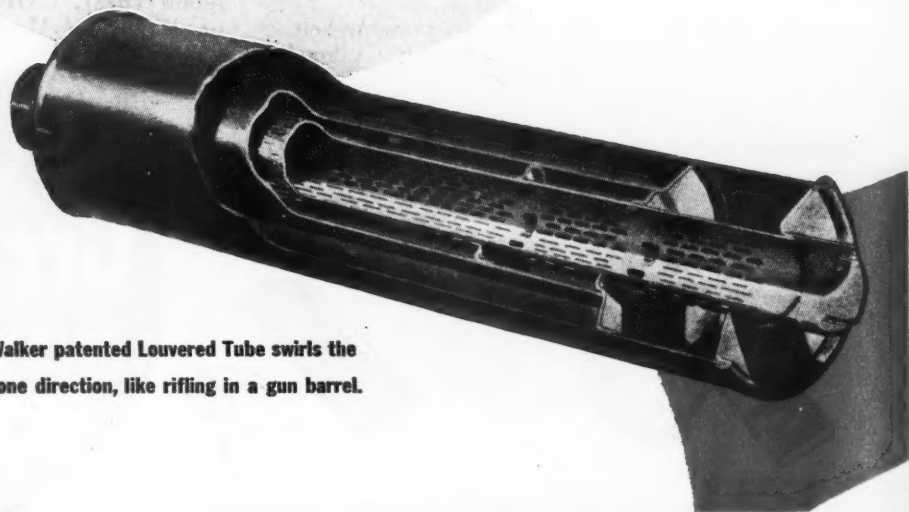
Grey-Rock

BALANCED BRAKES
BLOCKS
CLUTCH FACINGS
FAN BELTS • HOSE



TO MAKE CARS LAST, PUT QUALITY FIRST.

don't say "Muffler"...



The famous Walker patented Louvered Tube swirls the gases all in one direction, like rifling in a gun barrel.

say WALKER SILENCER

It's just Better Judgment...

● Better to be identified with the leader... for Walker Silencers are the world's largest selling replacement muffler.

Better to say "Silencer"... and label yourself as a smart merchandiser offering your customers the line with acceptance and reputation.

Better to say "Silencer"... and benefit from the pull of year-round advertising in *The Saturday Evening Post*—which says "Walker Individually Tuned Silencers" to millions of people.

The way to build for the future—and cash in now—is to stand firm on a foundation of quality products your customers know and want.

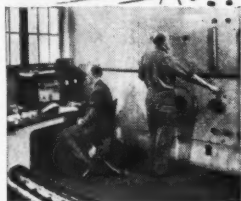
Don't offer "just a muffler"... shout *Walker Silencer* and be exhaust system headquarters in your community.

"Individual Tuning" makes the difference, and "I. T." is...



FIT... For Fast, Easy, Profitable Installation

Walker "Individually Tuned" Silencers fit in every detail. Shell lengths and diameters, size and shape of headers, brackets, flanges, etc., all meet installation specifications exactly! "I.T." makes the difference.



ACOUSTICAL BALANCE... For Quietness and Comfort

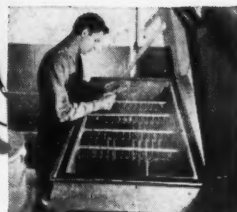
Maximum silence can only be achieved through the proper acoustical balance of all phases of the exhaust sound. Walker controls 1st and 2nd harmonics, high pitch and "come-down" within rigid tolerances of noise fatigue.

CORROSION BALANCE... For Longer Life

The materials and gauges of materials used in the construction of Walker "Individually Tuned" Silencers meet definite endurance standards—inside and out—assuring "corrosion balance" for long, efficient service.

PERFORMANCE BALANCE... For Peak Engine Efficiency

Walker engineers so accurately "Individually Tune" Walker Silencers that back-pressure never exceeds standards set by exhaustive road and laboratory tests to assure top engine performance and gas economy.



* I.T. MAKES THE DIFFERENCE

* INDIVIDUALLY TUNED TO EACH MAKE AND MODEL OF CAR

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN
Also Makers of Walker Jacks and Electric Lifts

Free... to



See—
Betty Grable • Dick Haymes

IN BILLY ROSE'S

"Diamond Horseshoe"

A 20th Century-Fox
Musical in Technicolor



**ANOTHER
AUTO-LITE FIRST!**

Merchandising Tie-in with America's
88,000,000 Movie Goers

Think of a display that capitalizes on Betty Grable, favorite pin-up girl of the Armed Forces, and Dick Haymes, the great singing star who has captured America's millions on the Auto-Lite radio show "Everything for the Boys." The supply is limited—so write for your cut-out today!

and Listen to
Dick Haymes

*Tuesday nights-1186
Star of the...*

AUTO-LITE

HIT RADIO SHOW

"Everything FOR THE Boys"

AUTO-LITE

Auto-Lite Dealers

THIS BIG FULL COLOR CUT-OUT

of Betty Grable * Dick Haymes IN BILLY ROSE'S "DIAMOND HORSESHOE"



PROFIT from this Auto-Lite tie-in that helps sell the millions who'll see the sensational 20th Century-Fox super extravaganza, Billy Rose's "Diamond Horseshoe." Features America's top stars, glamorous Betty Grable and the new favorite, Dick Haymes, who team to give you one of the most powerful promotions in Auto-Lite history. Remember, this gorgeous cut-out, in full color, ties in with the picture and theatre display. To get your free display, write

TOLEDO, 1 THE ELECTRIC AUTO-LITE COMPANY OHIO



Tie-in With Your... Local Theatre

Theatres all over the nation will display this big colorful cut-out. Have your local theatre write for one. It's FREE!

Tune in the AUTO-LITE

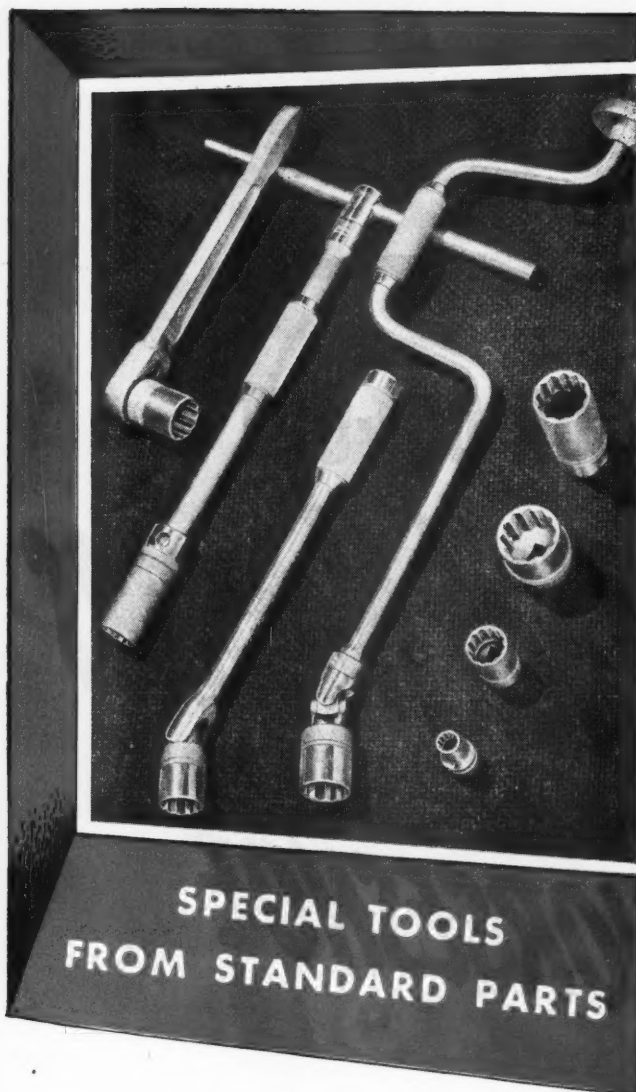
RADIO SHOW STARRING

Dick Haymes



Reaching the Millions who Listen to
Radio NBC—Every Tuesday Night

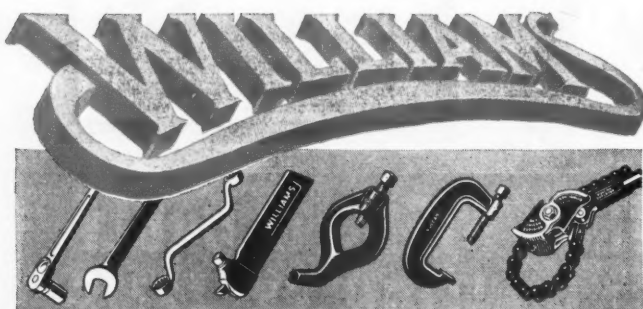
**SPARK PLUGS • BATTERIES • WIRE and CABLE
STARTING • LIGHTING and IGNITION SYSTEMS**



With an assortment of Williams "Supersockets," handles and parts the mechanic can assemble an almost endless number of special tools to fit exactly the work in hand. Wherever a socket wrench can be used, from the simplest to the most difficult job, this Williams flexible system supplies the right combination.

Five different patterns with drives from 1/4 to 1" square cover every conceivable application. These rugged time-saving tools provide the utmost in speed, safety and power. Write for free descriptive Data Sheets Nos. 4, 9 and 24.

J. H. WILLIAMS & CO., BUFFALO 7, NEW YORK



DROP-FORGINGS AND DROP-FORGED TOOLS

MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

Vol. LXIV, No. 7

June, 1945

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In This Issue

Slants on the News.....	17
Dealers Alert! New Cars are Coming.....	20
Will Two-way Radio Speed Repair Jobs? By Franz Serdahely	22
Color Can Step Up Your Shop Work.....	23
Too Fast for Reverse.....By J. Edward Ford	24
Car Dealer Emphasizes Carburetor Tune-up.....	26
GI Garage (Cartoon)	27
Pontiac's Model Service Station.....	28
Servicing Transmission Shifters...By Bob Turner	30
Motor Age Picture Gallery.....	33
Frank the Fixer (Cartoon).....	36
Readers' Clearing House.....	37
Washington Rules and Regulations.....	62
Shop Kinks	66
Legally Speaking	68
Advertisers' Index	150

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Automotive Division

Jos. S. HILDRETH, President and Manager

JULIAN CHASE, Vice Pres. G. C. BUZBY, Vice Pres.

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone Sherwood 1424.
New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8800. Chicago 1, Ill.—Room 916 London Guarantee & Accident Bldg., Phone Franklin 4248.
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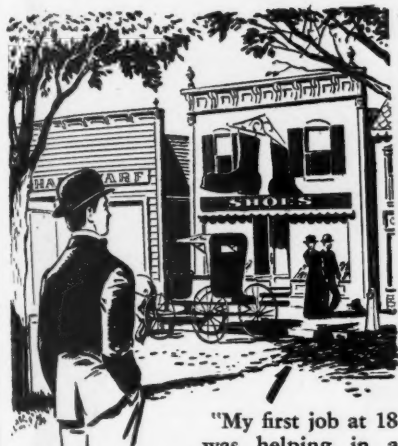
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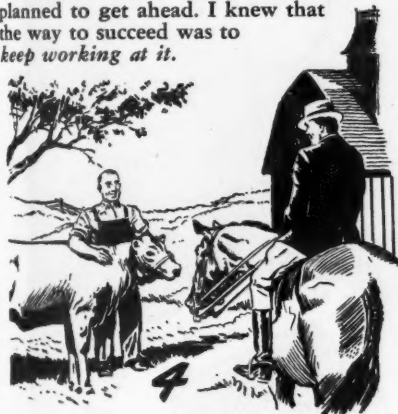
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WANTED: More Men Like "MIKE"

Reading time: 1 minute, 57 seconds



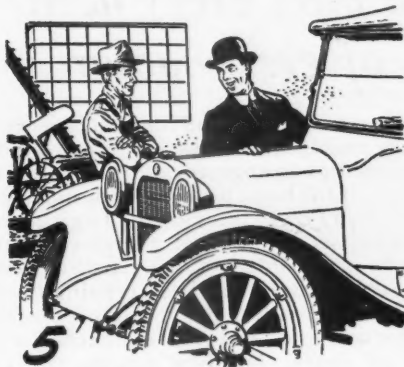
"My first job at 18 was helping in a shoe store. That was in 1900. With this modest start, I saved and planned to get ahead. I knew that the way to succeed was to keep working at it."



"Dealing in livestock I found I could cover ground faster in a car and do more trading. I bought one. A farmer-customer liked it and traded me some cattle for it. I sold the cattle and bought another car."



"Within a few years I had a shoe store of my own. I married and my wife helped me carry on the business. That gave me time to branch out and better myself. An opportunity soon came along."



"In 1918 I bought my first Dodge automobile, and about that time realized that more and more people were buying cars. I continued in the shoe business and livestock trading; but I also began selling cars for a local dealer along with farm machinery."



"One day I bought a horse; sold it at a profit and bought another. This business thrived and before long I acquired a livery stable as horse and cattle trading took me over the countryside."



"These various interests occupied me until 1927 when I became a Dodge dealer and devoted my entire time to this. I still operate this business along with a branch in a nearby town. Before the war, with nearly 100 employees, my automobile sales exceeded \$1,250,000 in a year."

* * * *

Early in life Mike recognized and followed the traditional American formula for individual progress.

He knew that with freedom of opportunity to compete with others in serving the public, the best economical security anyone could have is initiative, energy and industriousness. He was confident that under the American way . . . with the public free to choose . . . he would reap rewards in proportion to the success of his efforts. That was all the incentive Mike needed.

This dealer whom we call "Mike" is the owner of a successful business today. His progress is

typical of the opportunities that exist in free competitive business.

With the return of peace this should again be true of the automobile business which has thrived by anticipating public needs and supplying them. Every branch of this industry should offer a bright future to alert, ambitious men.

CHRYSLER CORPORATION
PLYMOUTH ★ DODGE ★ DESOTO
CHRYSLER ★ DODGE Job-Rated TRUCKS

You'll Enjoy "The Music of Morton Gould" Thursdays, 9 P. M., E.W.T., CBS

KEEP ON BUYING WAR BONDS

When writing to advertisers please mention Motor Age



Tangential ring tension scale, developed by Sealed Power, to check ring tensions.

26 basic designs to meet every need of every motor

So you can meet every ring replacement need in every make, model and condition of motor, Sealed Power engineers have developed twenty-six (26) basic piston ring designs for use in Sealed Power Individually Engineered Sets. Each set is specifically engineered to do the best possible job in a particular engine. Sealed Power has been refining these sets over five years, has been producing rings for car, truck and engine manufacturers 33 years. For best results, re-power with Sealed Power motor parts. Sealed Power Corporation, Muskegon, Michigan and Windsor, Ontario.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts

Buy more war bonds and keep them!
Pay \$3—get \$4

not 2...
not 6...
but 26



SEALED POWER PISTON RINGS

BEST IN NEW CARS! BEST IN OLD CARS!

SLANTS ON THE *News*

Will Automobile Show Introduce New Models?

NOW that it is definitely established that new cars will be rolling off the assembly line in three to six months, the question of a national automobile show arises. At the moment nothing has been decided, and it is questionable if a decision can be reached on this important problem at this time. While the automobile show is different in character than most conventions that are held by various associations and which have been banned by O.D.T., it would still probably be necessary to get official approval before the show could be held. However, during the months that intervene before any probable show date, there is ample time for the transportation situation to improve and for O.D.T. to revise or change its ruling on conventions and shows.

A national automobile show would undoubtedly simplify dealers' problems, as it would afford the buying public the opportunity to compare the different makes of cars, and also enable the dealers to study competitive features. As many dealers will be augmenting their sales force at this time, a show will provide an excellent

training period. Probably the most important advantage of staging a national show would be the opportunity of gaging the public's buying interest at this time, so that production schedules would be set more accurately, and steel requirements could be definitely measured.

Of course, the show should not be held if it interfered with war production.

Replacement Parts Keep 'em Rolling

OF even greater importance than the announcement covering the production of new cars is the removal of restrictions on production and distribution of replacement parts. It is true that the new car promulgation is more spectacular; however, the availability of replacement parts will have an even greater effect in maintaining transportation.

Tommy Winters, Pop O'Neill's young assistant, is again helped "over the hump" when he moves a Cadillac into reverse, and things happen. Follow this latest article in the Basic Course series on page 24 of this issue.

Who'll Run Willow Run?

THERE are interesting connotations in the report that the United Automobile Workers (C.I.O.) may purchase the Willow Run bomber plant from the Government. Bomber production will stop August 1st, and R. J. Thomas, president of the Union, told a delegation from Ford plant locals at an emergency meeting that he has appointments with individuals interested in building cars. Whether the individuals include Henry Kaiser is, of course, anyone's guess, but it should be recalled that Kaiser has always indicated a leaning toward labor. Of course, labor would have no difficulty in raising the necessary finances, and sales could be built up coercing union members.

Henry Ford II recently told employees that his company "is not in the least reluctant to see this plant or any plant discontinue making implements of warfare—once the war need ceases." That Ford does not need Willow Run for building passenger cars is apparent, for in 1929 he built more than 1,700,000 model A's at the River Rouge, a record he has not since equalled.

Tire Situation Still Unsolved

THE effect that the production of new cars may possibly have is a curtailment on the tires available for the cars that are in use today. When discussing the new cars and the attendant problems, mention is most frequently made of the shortage of steel and machine tools. While the new cars may not actually cause a curtailment in tires, they will at least reduce the rate of increasing the supply of tires for the older cars since the new models, on the basis of four tires per vehicle, will require 800,000 tires. However, accelerated progress in the Pacific theatre would materially increase the supply of rubber and reduce, or eliminate, the necessity for drastic conservation of rubber and tires.

Prompt Action Merits Praise

THE Government is to be commended in the promptness with which it has increased the allotment of gasoline to A and B book holders so soon after the defeat of Germany. Though there are many who, basing their opinion on the activities of the black-market, believe that there has been ample gas for an increase for a long time. Percentage-wise, it seems like a generous increase. However, on a mileage basis it means that the average owner can now drive 45 miles per week instead of 30 as in the past. Before the war the average motorist drove approximately 150 miles each week. So it is easily understood why nearly 2 per cent of the motorists, as indicated by the *Milwaukee Journal* survey, have elected to keep their cars in dead storage for the duration.

Time And Price Waits For OPA

AN important angle in connection with O.P.A.'s regulation 49 to M.P.R. 165, which sets the time for 56 repair operations, is the accuracy of the time set for the individual operation. O.P.A. states that the time was taken from the various factories' flat rate manuals and every mechanic who has ever held a wrench in his hand will agree that many of the repair operations are seriously under timed. As an example, Ford allots 6.6 hours for the performance of a carbon and valve job on a V-8 Ford. While it is possible to complete the work in that time, it would be an exceptional rate and which could not be approached by the average mechanic working on the average car. The Chilton manual prices this job at \$16.40, or 8.2 hours.

Buick affords another good example in assigning 5.5 hours for a carbon and valve job. In our last manual, this job was priced at \$14.45, which at the \$2.00 per hour rate is 7.22 hours. There are many other instances which could be pointed out, but the two just given are sufficient to indicate the difficulties involved in adhering to factory flat rate specifications. Certainly the thousands of shops which have been using the Chilton manual have a strong basis for objecting to the new O.P.A. ruling which specifies that a shop should use the lower price in case of disagreement between the O.P.A. (factory) price and the price used by the shop during March of 1942.

Car dealers will find the discussion of new car production which appears on page 20, of particular interest and importance at this time.

Improvements Stem From South Pacific Warfare

ONE of the direct results of the war will be a vast improvement in rust-proofing. This stems particularly from experience gained in the South Pacific, where even camera lens are quickly covered with strange fungi and jeeps and all types of vehicles wallow in mud day after day. Equally valuable experience is being gained from the amphibious vehicles which have to be protected from the ravages of salt water.

Not only are new rust and corrosion preventive compounds being developed, but new designs are being made which will exclude water and moisture from the unit. These advances will find their peace-time applications which will mean better and longer-lived cars, trucks and tractors.

Research Labs Study Aluminum Brake Drums

ONE of the developments which the average motorist does not hear about, but which is receiving careful study in research laboratories, is the use of aluminum for brake drums.

Aluminum is not a satisfactory material for the friction face of the drum, so the surface is sprayed with iron or some other wear-resistant material. Lightness is, of course, a major advantage, and in this instance means better acceleration, quicker deceleration and improved gasoline mileage. Quieter operation is also claimed.

Aluminum brake drums would be particularly worth while in the truck and bus field where drum sizes are large and consequently weight reductions would be of sizable proportions.

Chilton Will Publish Another Flat Rate

WHEN O.P.A. decreed that shops should adhere to the prices they were using in March, 1942, it automatically established the then current sixteenth edition (1942) of the Chilton Manual as the official pricing book for thousands of service stations all over the United States who were using the manual at the indicated time. Naturally, Chilton has refrained from issuing a new edition, as it felt that as prices were frozen there was nothing additional to offer the service industry, and to bring out a new manual based on a higher hourly rate would, of course, be in opposition to O.P.A.'s ruling.

Since that time paper has been rationed, making it impossible to produce a new edition until paper is once more plentiful. As nearly 175,000 lbs. of paper are required for a single edition of the manual, it represents a material saving of paper, which is being used by the armed forces.

Just as soon as paper is available and new cars are being produced, the Seventeenth Edition will be printed. Naturally, this new edition will supply all of the data, flat rate prices, parts prices and service procedure on the post-war cars.

New Car Prices Present Problem

WHILE the procedure for pricing the new cars has been roughed out, it is, of course, still impossible to determine just how high they will be. The prices will be definitely higher than in 1941 as the formula for determining the prices on the new cars states that the increased cost of materials and

labor is to be added to the 1941 cost price and the average industry profit is then added to the costs as determined above. This selling price is then to be compared to the O.P.A. ceiling price for 1942 cars, and whichever price is higher is selected as the price for the new cars. Most guesses are that prices will be up at least 25 to 30 per cent.

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• • • Unavoidable

Due to the shortage of paper and resultant paper rationing, 9.8 pages of scheduled advertising were omitted from the June issue of MOTOR AGE.

The total number of advertising pages omitted for this reason during the first six months of 1945 is 106.2.

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Fishers Trying to Buy Hudson Motors

RUMORS concerning Fisher Brothers' plans, which have been rife ever since they resigned from G. M., finally jelled with the announcement by A. E. Barit, Hudson president, that the Fishers had made a bid to acquire controlling interest through purchase of 400,000 shares of unissued stock at the book value of \$22.61 per share. Hudson has made no decision, while as usual the Fisher Brothers said nothing very loudly. What effect this would have on the Hud-

Servicing transmission shifters on Buicks is no easy task. Bob Turner, Motor Age's Technical Editor, has written a clear, detailed account on these units. It can be found on page 30 of Motor Age.

son Company, its dealers and its product is anyone's guess. However, while they were active in the management of G. M., the Fisher Brothers were always on the side of progress.

Newspaper Survey Indicates Trend

THE survey conducted by the *Milwaukee Journal* is particularly interesting, as it points out several important points dealing with trends in the purchase of maintenance and the operation of cars. The data was obtained by mail sent to names selected at random from the city directory. It was found that over 41 per cent of the car owners purchased their major repairs from independent repair shops, while only 36.5 per cent had their major repair work performed at the dealer from whom they purchased the car, 10 per cent from other car dealers, and 13 per cent from super-service stations. Minor repairs showed an entirely different picture, as 49.6 per cent of the car owners secured such work from super-service and filling stations. The independent shop was second, enjoying 29.1 per cent of the business, while car dealers booked only 22.9 per cent. The dominance of the independent shop is even more marked than the figures as presented would indicate, for the super-service station doing repairs would also be classed as an independent repair shop and these percentages should therefore be added.

It is also interesting to note that 1.4 per cent of the families have placed their cars in dead storage for the duration. If that can be projected nationally, it means that there are nearly 400,000 passenger cars that are not registered at present, but will be as soon as gasoline and oil become plentiful.

DEALERS ALERT



This will soon be a familiar scene as car factories strive to complete their production lines at the earliest possible moment.

New Cars are Coming!

With restrictions lifted new cars will soon be rolling off assembly lines and finding their places in the nation's showrooms. 20 to 25 per cent increase in prices indicated.

CAR dealers and the entire industry were heartened during the past month when W.P. B. gave the green light to car production. Initially production is to be set at 200,000 cars for the last half of 1945 and many are expecting cars to come off the assembly lines, ready for sale by car dealers by October or November. For the first quarter in 1946 a production of 400,000 cars is expected.

Steel seems to be the main factor limiting production at this time and the starting quota is far below the more than 2 million cars that the industry has declared to be the minimum economic annual production rate. However, since W.P.B. has agreed to revise material allotments frequently so to keep abreast of any increase in supply, the more optimistic believe that the introductory production of 200,000 cars will be exceeded. Naturally, with the uncertainties surrounding the number of cars that it is permissible to produce, the difficulties of setting sales prices are amplified and considering the small number that will be produced coupled with the increased cost of labor and material, prices should be at least 25 per cent higher than for corresponding 1942 models.

O.P.A. has decreed that prices for the new cars shall be calculated by adding the increases in materials and labor since 1941 to the costs in 1941. To this is to be added the average industry profit during 1936 to 1939. The result of the foregoing is then to be compared to the 1942 ceiling and whichever price is higher, is to be the price of the new model.

As to how the total production is to be divided among the various com-

panies, nothing was decided at the meeting in the middle of May. However, individual quotas, it is expected, will be based primarily on a percentage of pre-war production. It is also expected, modifications of quotas will be made possible after close scrutiny of individual production problems. As it will be possible to obtain material after July 1 without C.M.P. authorization, it is generally conceded companies are striving to complete design details and production lines by that date.

Naturally, some manufacturers are in a better position to complete the necessary preliminaries than others. For instance, if the Army adopted some company's engine, then there would be no changes necessary in that company's engine production line when converting to passenger car production. On the other hand, if the factory changed over to the production of shells or some other purely military article, then a relatively longer time would be occupied in conversion.

Another factor which will strongly effect the time at which the individual factory will start production will be the number and size of government contracts that are in force. Naturally, some companies will be in better position to take advantage of the go-ahead signal because of more extensive cut-backs and cancellations of war contracts. Because of competitive advantage of getting cars into dealers' hands as early as possible, all factories are making every effort to bring cars out as early as possible.

It must be pointed out that if the 200,000 cars were to be distributed evenly among the 30,000 dealers, each

dealer would only receive approximately seven cars. If production is to be based on a percentage of cars produced by the individual companies in 1941, Ford, Chevrolet and Plymouth dealers would have more cars to offer their customers than the dealers of those companies producing fewer cars during the base period.

Just what the new cars will look like and what mechanical changes will be included is still not known. However, appearances will be changed and 1942 lines will not be continued as was at first believed. This is indicated by work being done by tool and die shops which have been working on new dies for front fenders and radiator grilles.

Many mechanical changes are also expected. Many of these are an outgrowth of war-time experience, while others are the result of service experience with the 1942 models.

The new lighter weight Chevrolet announced by C. E. Wilson, will not be ready until after the defeat of Japan. Ford's lower priced model will also not be ready immediately.

The reported deal of the United Automobile Workers (C.I.O.) to purchase Willow Run from the Government, and its bearing on competition among manufacturers is also of particular interest at this time. However, no cars could be expected from that source for many months. For not only must the factory be completely equipped to manufacture cars, but in addition, engineers, production men, and other personnel must be employed. Furthermore, dealers have to be signed up to handle the car after it is produced.



Will Two-way Radio Speed Repair Jobs?

Postwar repair shops may see the use
of radio as an important service help.

By FRANZ SERDAHELY

WITH new innovations in shop equipment for auto repair shops being introduced constantly, the subject of future communications has been by-passed or dismissed lightly by groups of postwar planners. Radio communication has progressed during the present war and has proved so practical and essential that its application to modern automotive maintenance should be investigated.

Let's begin with the two-way radio, or radiotelephone, whereby one can communicate with moving vehicles and fixed telephones. It would work in somewhat the following manner: Butch Jones' favorite wrecker is parked three miles from the shop near an important highway junction. Bill Smith, ace mechanic of the shop, is seated behind the wheel catching a slow smoke. The signal buzzer on

his panel gives a sharp whir, and Bill reaches for the familiar telephone hand set. The foreman's voice comes over the wave band clear and loud, directing the wrecker to a spot a mile away where a customer's car has broken down. Switching off, Bill highballs the wrecker to the spot within a matter of minutes.

When the wrecker arrives, another crippled vehicle appears on the scene. There is too much work to handle, so Bill Smith calls over the channel to the shop and asks for another truck to come out and assist. On the home trip, the foreman again calls in to tell Bill to stop and make a quick tire change on another job a mile and a half from the garage. All this has occurred within the hour! Waste of time in retracing routes, chasing down a farm telephone, and ragged nerves have all dwindled to a

minimum through the use of two-way radio.

Truck fleet operators could speed up runs, and combat highway breakdowns through the use of such equipment. A stalled truck, miles from any sign of civilization, could contact its home dispatcher in a matter of seconds and obtain relief hurriedly. Perhaps while another truck of the same fleet was coasting along the highway, the dispatcher would call in and give orders to unload and pick up another load at an adjacent city. Without unduly interrupting his schedule, the driver complies and saves his company several thousand dollars.

Radio communication adapted to present day uses is no idle dream. In fact, The Federal Communications Commission has already conducted hearings on two-way radio communication as a result of Bell Telephone System tests held in New York State. The FCC published the following report on the hearings:

"The commission has concluded that the grant of frequencies for the purpose of providing two-way radio communication with mobile units would be in the public interest for the following reasons:

"1. There is no practicable substitute for the use of radio to accomplish this purpose.

"2. Two-way radio communications with mobile units such as intercity and interstate buses and trucks should contribute greatly to highway safety.

"3. The proposed service should benefit a large number of people as shown by the scope of the extent of the bus, truck and taxicab industries without considering the various other portions of the general public (doctors, salesmen, etc.) who may receive benefit from this service when established.

"4. Although the details of operation of the proposed new service have not been definitized, it appears that it can be established on a practical working basis as soon as the materials and manpower are available."

From the foregoing statements, it can be readily recognized that radio communication will be an established business link before many years have

(Continued on page 52)



Color Can Step Up Your Shop Work

War plants find that eye fatigue and monotony can be remedied by proper color combination

TODAY in thousands of war plants throughout the country, workers are turning out material faster than ever, working under pleasant conditions created through the correct combination of color and light. Science, pressed by war needs, has made tremendous strides in making stainless full-vision possible for these workers. As a result eye-fatigue, headaches and listlessness on the part of workers, created by color tones, have been eliminated, and worker morale has risen to new heights merely by adding a few coats of paint!

Men like Faber Birren, well known industrial color consultant, Wilhelm Ostwald, paint technician, Dr. Matthew Luckiesh, and the late Frank K. Moss, illumination engineers, conducted extensive research and tests to improve seeing conditions. Their efforts are now reflected in the increased war production figures, and the reduction of personal injuries in war plants.

Selection of the correct color in the postwar world will attain far-reaching results in industrial plants, factories and automotive repair shops. It will speed up work, create pleasant working surroundings and will reduce working hazards.

Eye-fatigue, paint engineers explain, has done more to discourage good work than perhaps any other factor involved. Yet today in many repair shops, mechanics are still squinting under harsh incandescent light, and are distracted from their work by glaring painted walls and surrounding areas. Machines are actually robbing light from the worker without the worker's knowledge!

In service shops, pleasant working surroundings, expediency and safety factors must all be considered before a painting scheme is attempted. Two points most compelling to the attention are motion and extreme brightness.

"High visibility, ease of seeing, and good seeing conditions," Dr. Luckiesh asserted, are the underlying theme of color for shop uses.

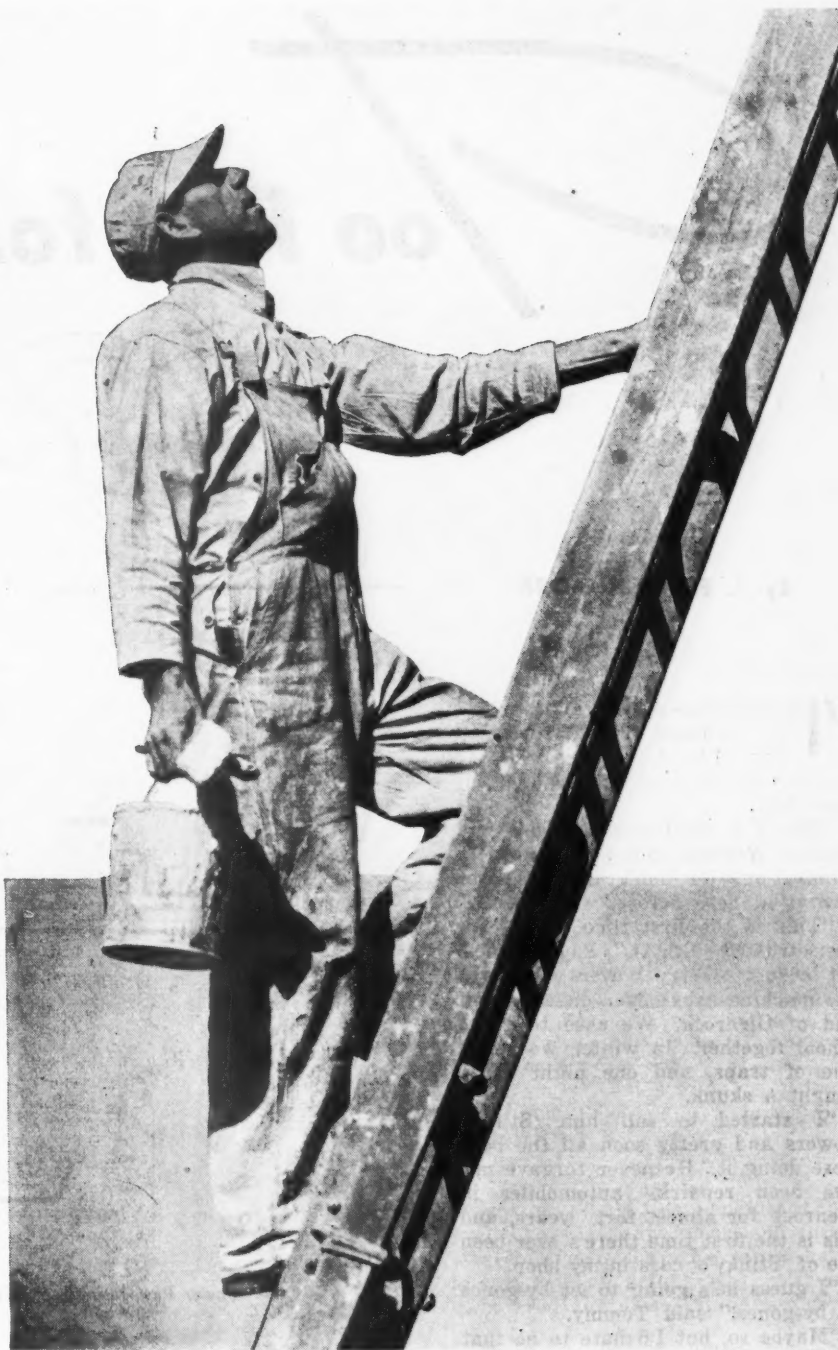
Ceilings in any shop should always be painted white for proper light reflection. Colored ceilings it has been proved have a tendency to cause workers to peer at it constantly. Hence ceilings should be a glistening white for best results. Hues for walls for the shop interior should lean to the deep gray or green side, and a belt

of either color or dado should extend up at least five feet from the floor to resist soiling, abuse and to cover oil stains. Above that point, a lighter pastel shade should extend to the ceiling. This will have a "lifting" effect on workers. Floors should also be painted to "bounce" light back to the repair job, and to promote cleanliness and discourage the accumulation of litter. Corners of the shop can be painted with small white semi-circles to promote good housekeeping. By employing paint here to its best advan-

tage, the mechanic's job, car repairing, is the center feature of interest. Everything else has been subdued to harmonize with the job. Thus a pleasing psychological effect has been obtained and a big step toward better work has been achieved.

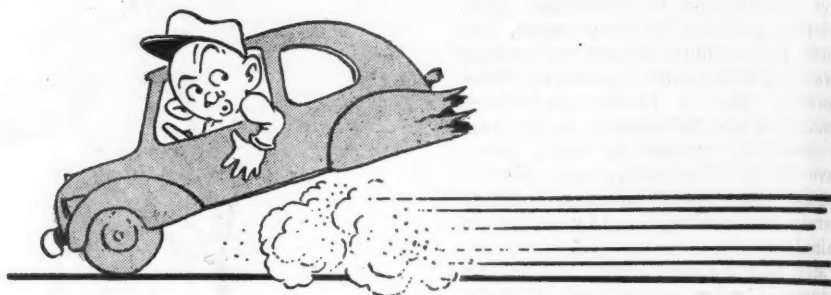
In auto display rooms, similar effects can be obtained through the proper application of paint and choice of color. Taking an average showroom where light is entering from two or more directions, the reflection fac-

(Continued on page 54)



Too Fast for Reverse

By J. EDWARD FORD



"It looks like we're startin' to get the carriage trade," remarked Pop O'Neill, eyeing the 1942 Cadillac standing in the middle of the shop floor.

"That's a swell looking job," said Tommy Winters, shaking his head in admiration. "I don't think I ever saw it in here before."

"This is the first time we've ever been trusted with it," Pop laughed. "It belong to Jerry Powers who owns the machine shops over on the other end of Glenrock. We used to go to school together. In winter we ran a line of traps, and one night Jerry caught a skunk."

"I started to call him 'Stinky' Powers and pretty soon all the boys were doing it. He never forgave me. I've been repairin' automobiles in Glenrock for almost forty years, and this is the first time there's ever been one of 'Stinky's' cars in my shop."

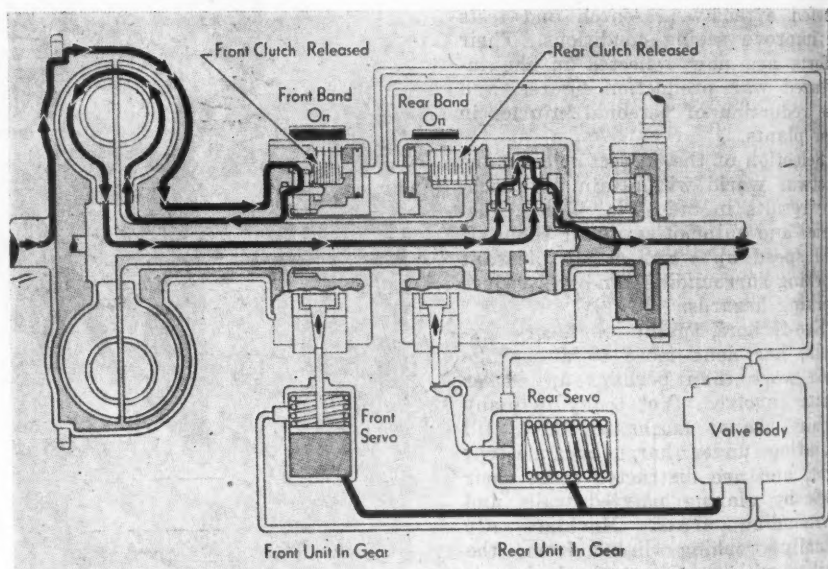
"I guess he's going to let by-gones be by-gones," said Tommy.

"Maybe so, but I'd hate to be that new chauffeur of his when he tells 'Stinky' where he got his car lubricated," Pop chuckled.

"Is that all he wants done—just lubrication?"

"That's all. Change the oil in the engine, and lubricate the chassis. The chauffeur will be back about quarter to twelve. Says he's got to pick up the boss and bring him into town for lunch. So there ain't no rush. Larry's got a couple rush jobs you can help out on first."

Larry had not only a couple, but several rush jobs—all of them on trucks belonging to local shopkeepers. He kept Tommy hustling all morning, and it was quarter past eleven before



Power flow through Hydra-Matic Drive in first speed

Tommy screwed up courage enough to tell him that he had to lubricate Jerry Powers' Cadillac.

"Oh, let him wait!" snapped Larry. "He waited long enough before he'd let us work on one of his crates. Now he can wait till we're ready to grease it."

"But Pop says it's got to be ready at quarter to twelve."

Larry looked wearily up and down the line of trucks awaiting attention and sighed. "Okay, but hurry it up all you can."

Although he was determined to

make all the speed possible, Tommy was not too familiar with Cadillacs and had to follow the lubrication chart carefully. He raised the car on the lift and removed the crankcase drain plug. While the oil was draining, he proceeded to lubricate the chassis. Still following the chart, point by point, he checked the lubrication level in both the differential and transmission. After replacing the drain plug, he lowered the lift and started to refill the crankcase. He was upending the last can of oil when he saw a smartly liveried chauffeur walk



"That Cadillac," Pop explained, opening the book, "has a Hydra-Matic drive. It's about as different from the ordinary transmission as left from right."

Pop O'Neill shows Tommy that by slowing down, it's easy to get out of reverse in this, the 42nd article of a series

in the front door. The chauffeur spotted the Cadillac and came over. He had a cauliflower ear and a deep scar on his chin.

"Takes all day to get a car greased here, huh?" he grunted.

"We're pretty busy these days," said Tommy. "It'll be ready as soon as I wash the breather cap and the air cleaner."

"What's the rap?"
You'll have to see Mr. O'Neill in the office."

After the chauffeur left, Tommy washed the breather cap and air

cleaner, and dipped the former in engine oil. Then, when he had closed the hood, he climbed into the front seat and stepped on the starter. He put the selector lever in first, then in reverse, and backed off the lift. Stopping, he tried to move the lever but it resisted. He pushed a little harder, but it still refused to move. Gingerly, he stepped on the gas; the car moved backward.

He stopped it quickly and again tried to push the lever out of reverse. Again he failed. He was a little panicky now. Cutting the switch

he got out. This was something Pop would have to know about and there was no time to lose. He would have to get to Pop before the chauffeur discovered that something had gone wrong.

Tommy ran for the office. When he burst in, Pop was starting to write out a bill.

"Pop," exclaimed Tommy, "can I see you outside a minute?"

"As soon as I finish this bill."

"Don't finish it now. I've got to see you!"

With a puzzled frown, Pop came out of the office. "What's up? Did some new parts come in? Or is the war over?"

"It's that Cadillac," explained Tommy. "I backed it off the lift, and now I can't get it out of reverse. I guess I busted something."

"Hmm," Pop echoed, running

(Continued on page 56)



Carburetor repair at the "Jerry" Swanson, Inc., service shop, Fort Wayne, Ind.

Car Dealer Emphasizes Carburetor Tune-up

As leader to build increased shop profits and bigger service volume

WITH a pre-war sales volume of 500 new and 1500 used cars a year suddenly cut off by the war, "Jerry" Swanson, Inc., Chevrolet dealer of Fort Wayne, Ind., turned more than ever to efficient service methods to carry the organization onward and assure their customers of an uninterrupted use of cars.

With gasoline restricted to drastic

proportions, carburetor service promised the highest volume of repair work for the shop, and the best results for car users. As William C. Emrah, service manager explained it, when you tune up a motor, you find out if it needs rings, a valve grinding job or other work, and the simple tune up job often turns into a complete motor overhaul. It soon became obvious that more carburetor work

had to be done than before, because of the car owner's desire for better mileage. With the aid of motor analyzers, and other modern shop equipment, a steady average volume of 400 service jobs are turned out each month. For reasons explained, some of these runs up to \$200 to \$260 for complete overhauling.

The maintenance department employs seven full time mechanics and two helpers, one a parts pick-up man. As all work is handled on a flat-rate basis, Mr. Emrah points out that better workmanship and more jobs can be turned out by having a man specially trained to take care of practically every department. For example, a man is specially trained to take care of car radios and electric work. Two men overhaul engines. One man is assigned to handle carburetor and tune-up.

This method is more profitable to the company, and is going a long way toward improving customer good will which the company counts on to assure a steady post war volume of car and maintenance sales. Mr. Emrah added that before the war you could put a man in any department, but today you have to take inexperienced men and train them. When you start them in on special work in any department they will learn the work easier and do it well.

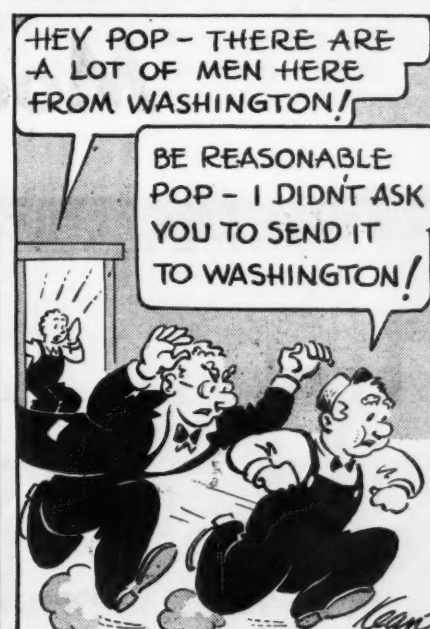
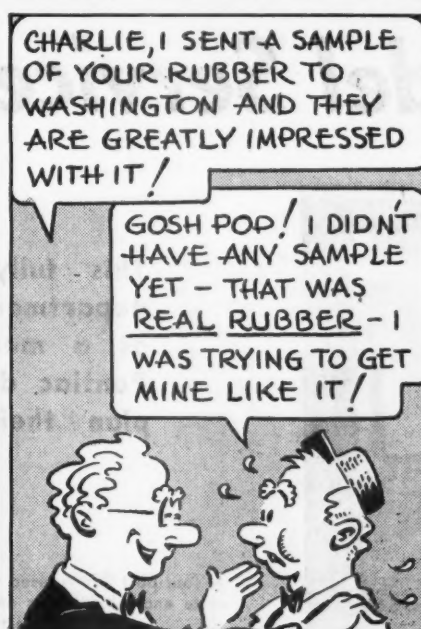
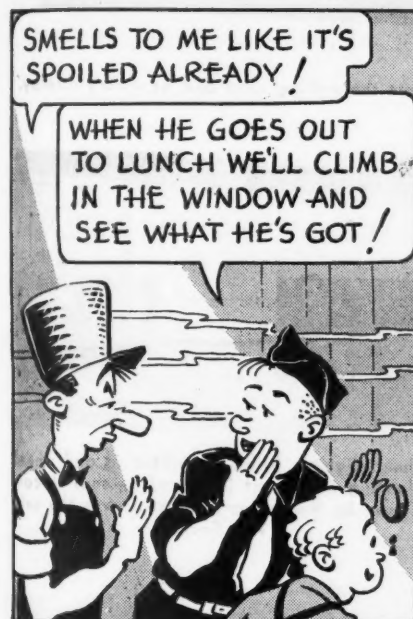
However, if any one department gets covered up with work, some of the men from other departments get busy and help out under the supervision of the head workman in that given department. During the present time, two apprentices are starting to learn service. They are kept on one operation until they learn the work then gradually change over or extend their activities, until they can eventually handle any work in the shop.

In taking on new employees, they are selected from ex-service men with medical discharge for disability, and trained with a definite purpose of minimizing employee turnover, and assuring the workers a good future with good pay for faithful work.

The program of providing a fast, as well as an efficient customer service, is important today, the management believes; but it will be even more important after normal competition for business returns. For example, besides training men properly, to handle the big post war repair service, new equipment is in use or being installed. This equipment is selected not only because of the work it will do, but also because of its appearance as Emrah realizes that shop appearance will be a determining factor in sustaining a profitable volume of repair work. To cite an example, the entire shop is being redecorated. Floors are to be painted with white diamonds with red centers or blue borders. It is neat appearing and practical in that it indicates plainly where to park cars without sacrificing space or using two

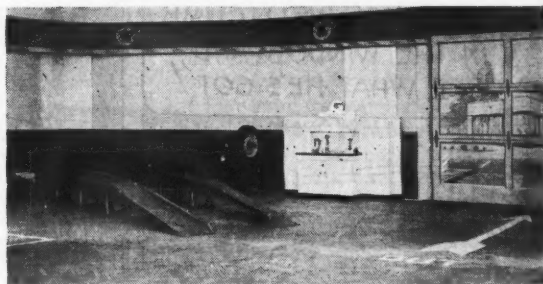
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GI GARAGE *by ADDIS KEAN*



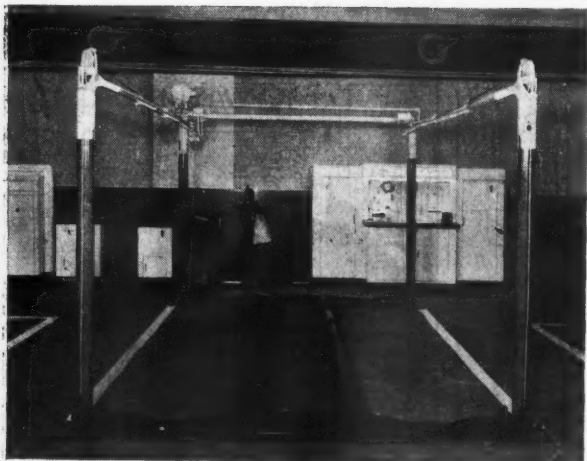


View looking toward the entrance. Note the waiting room and accessory display.



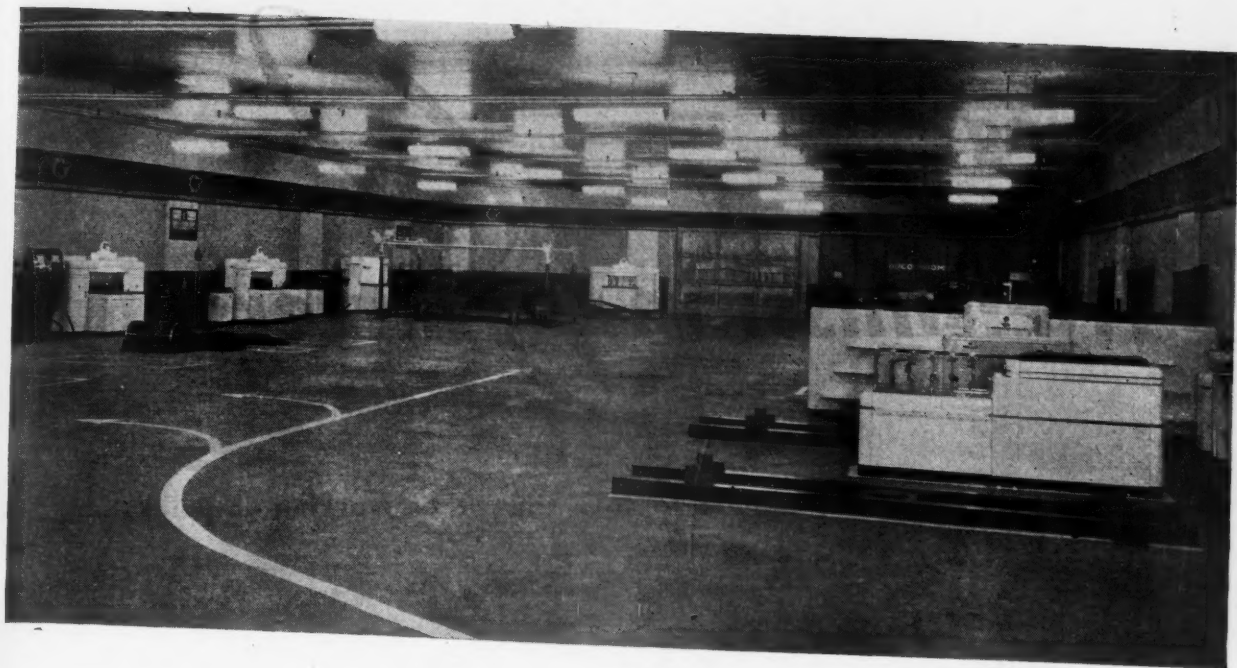
Wheel aligning, frame straightening and wheel balancing equipment is placed so that it can be seen by the customer as he leaves the service floor.

Model Service Station

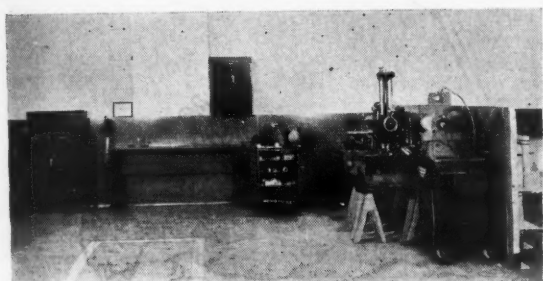


This fully equipped service department has been built as a model or pattern for Pontiac dealers to help them plan their post war shops

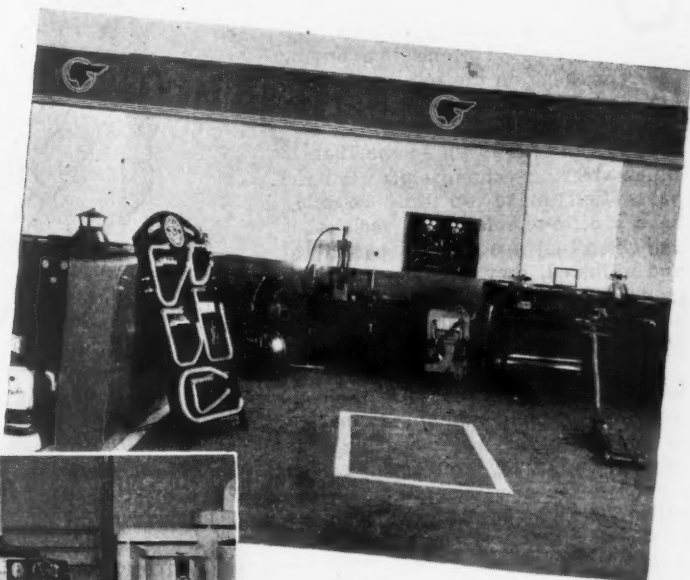
A four-post lift is used in the brake department. Note also the white enamel cabinets and riveting equipment. This department is next to the wheel aligner.



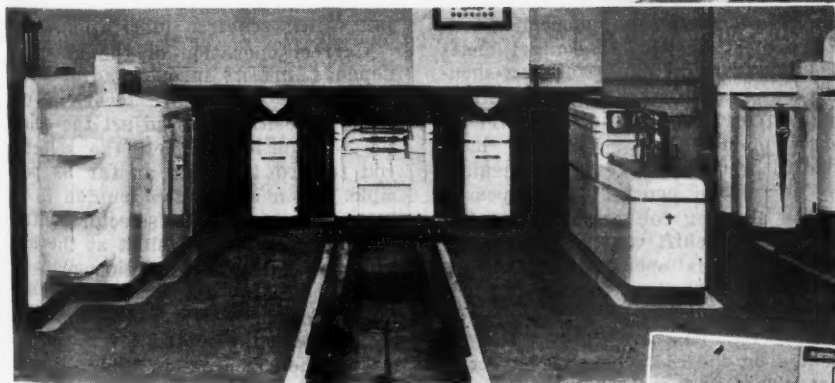
All departments and equipment can be seen from the waiting room.



All the equipment required to perform every job from a minor to a major overhaul is provided in the engine service department.



To speed body and fender repairs, all the latest equipment from power driven straightening equipment to gas and electric welders is provided.



Two bays with individual lifts are used in the lubrication department which is placed close to the entrance and waiting room.

Placed close to the waiting room and entrance is the engine tune-up department fully equipped for testing and checking. Note the dynamometer.



Servicing

Transmission Shifters

Follow this detailed method to save time when working on Buicks

By BOB TURNER

ONE of these days you fellows might have to do a job on one of these steering column cog-mixers. There's nothing like having the right dope on the job before-hand and it also might save a little skin on some of the knuckles.

Here's the low-down on the 1941-42 Buick steering column shift. All the parts that make up this assembly have a definite relation to each other and when they are properly assembled and adjusted, they provide easy control of gear shifting. If all the parts are correctly assembled, shifting noise will be reduced to the minimum.

The control lever bearing is a fabricated bushing located in the control lever housing nut and supported on the inner side by a bearing seat held in the control lever housing. The control lever housing nut must be pulled up tight so that the shoulder in the nut will hold the bearing nut in housing.

The control shaft assembly is tubular and fits around the steering tube. The upper end of the control shaft contains two slots which locate the control lever housing. The control lever housing slips over the control shaft and is held in place by a clamp screw. The upper end of the control lever housing forms the bearing for the control shaft and control lever housing where it is located in a metal and fabric bearing in the directional signal switch housing. The bottom end of the control shaft is supported by the control shaft lower bearing in the steering gear housing. Great care must be exercised, when installing the control shaft in either the upper or lower bearing, not to score the fabric in the bearing as this would make shifting a tough job. Always use new bearings, as all the old ones are good

for is to heave at your mother-in-law. To protect the lower control shaft bearing from dirt and water, a shedder is pressed in the housing after the bearing has been installed. These parts must be very carefully handled to prevent damage to the seal.

The selector control rod is located in the steering column jacket to the right of the shift control shaft. The control rod is operated by raising or lowering the control lever when in the neutral position. The selector control rod has five rubber sleeves located on the rod where it may contact either the control shaft or the steering column jacket. The purpose of these sleeves is to prevent noise when the selector rod is moved.

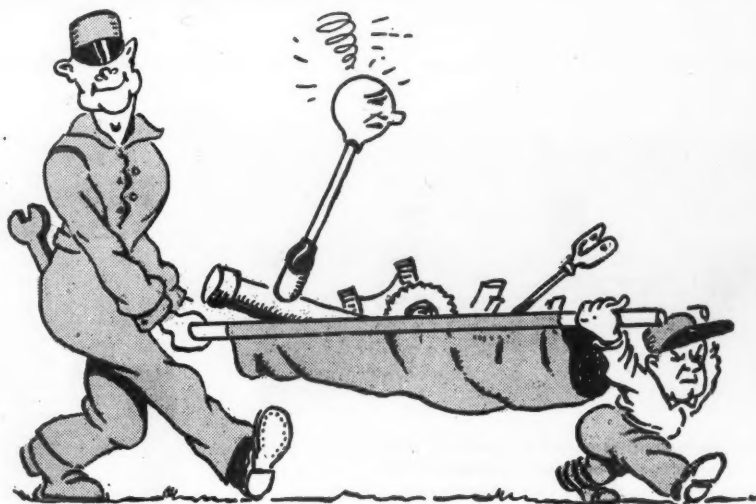
Two shifter rods are used on all series. The short rod is non-adjustable and the long rod is provided with an adjustable yoke at the front end. Both rods are connected to an idle lever supported by an idler lever bracket mounted on the steering gear. This lever is bushed and works on a

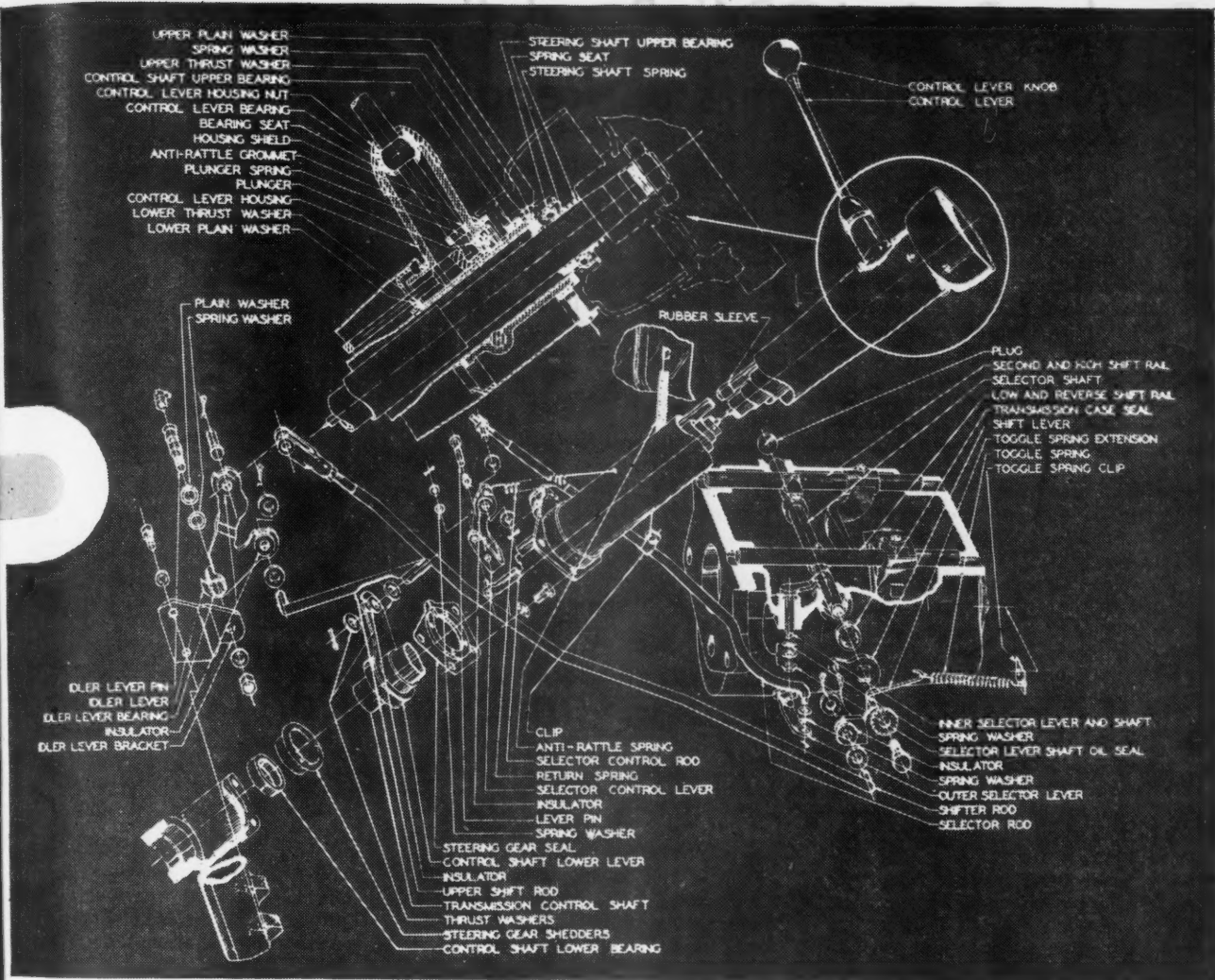
pin which requires lubrication.

Correct operation of the assembly depends on its proper adjustment. First place the shift lever in the neutral position. To adjust the selector control lever, move the selector rod toward the rear as far as possible. Then adjust the trunion to fit in the bushing in the selector control lever. To adjust the shift at the idle lever, place the transmission gears in second speed. Adjust the sleeves on the end of the shifter rod at the idler lever so that the control lever housing clears the opening in the steering column mast jacket by $\frac{1}{8}$ in. If this adjustment is correctly made it should give an approximate clearance of $\frac{1}{8}$ in. of the control lever housing in the steering column mast jacket when the control lever is in the high gear position.

Now here's a few tips that will help you when assembling or doing other work on the shifter mechanism.

A housing shield is provided for the control lever. This shield is lo-





Design details of steering column gear shifting mechanism as used on 1942 Buick cars. The design on the 1941 models is similar.

located just inside the steering column mast jacket. A notch is moulded in each end of the shield to identify the top for correct assembly.

The shift lever has an anti-rattle grommet on the inner end. Examine this grommet for wear and replace if necessary.

If the directional signal switch wires have been removed for any reason, take it easy when you replace them. Flatten the wiring harness to give you a little clearance in the steering column mast jacket.

When assembling the shift control, it is necessary to have the rubber grommets, fabric and steel washers in the right order. Assemble them the way they are shown in the illustration.

If you want to remove or replace the selector rod, you will have to remove the steering column mast jacket as there is not sufficient clearance to do the job otherwise.

When shifting from low to second

speed, the lever does not automatically drop through neutral, check the selector shaft in the transmission and in the transmission case seal for binding.

Use every care when you remove the selector shaft from the transmission case. Drive it out the right side of the case. When you put it back, install it from the left side otherwise the oil seal will be ruined. When you replace the sealing plug on the right side, use a sealing compound.

Check the selector shaft and shift rails. If they are bent, it will cause hard shifting.

When removing the transmission, the outer selector lever and the outer shift lever, on the Series 40-50 only has to be removed before the bolt holding the transmission case to the flywheel housing can be removed.

The selector shaft and the low and reverse shifter rail on the Series 40-50 must be removed before removing the inner selector lever and shaft. The

selector shaft only need be removed on the Series 60-70 and 90 to remove the selector lever and the shaft.

The control lever and the movable parts of the socket assembly should be lubricated with a suitable lubricant whenever lubrication appears necessary. All models have an idler lever connection at the steering gear housing which requires lubrication at the regular chassis lubrication intervals or whenever shifting becomes difficult.

The control lever knob screws on the control lever and will have to be removed when it is necessary to replace the housing unit. The control lever bearing is made with two different radii and must be assembled with the small radius toward the column brackets.

Easy operation of the shifter assembly depends entirely upon proper assembly and adjustment of the entire unit.

Dealers Protest OPA's Regulation Covering Time Limits on Repairs

ON receiving the news that O.P.A. was setting specific limits on the hours of labor that automobile repair establishments may charge for, car dealers individually and through their trade associations protested so vehemently that O.P.A. forced to postpone for 30 days the effective date of the regulation which originally was set for June 14.

The action, which according to an O.P.A. spokesman was taken to check the practice in some repair shops of charging customers for more hours of labor than were actually required to do a particular repair job, set specific limits on 56 common passenger car repair jobs.

The dealers based their protest on the fact that while the repair times as given in the O.P.A. list were taken direct from factory manuals, with present unskilled mechanics and old cars, it was impossible to complete the jobs in the time allowed. Furthermore, many of the time allowances were set purposely low by the car factories so as to attract customers.

Distribution of copies of a special OPA supplementary regulation giving ceiling charges for the 56 repair jobs will be made through local War Price and Rationing Boards. Each shop was required under the order to have a copy of the new regulation on hand for inspection by customers on request. Auto users will be able to get copies of the regulation from repair shops or from OPA War Price and Rationing Boards as well as from all other OPA offices, if they wish a copy of the regulation itself to check what time may be charged for on the 56 listed passenger-car repair jobs.

Alongside the 56 standard repair jobs listed in the new regulation are the time limits allowed to complete the work on different year models of 16 well known makes of passenger cars. The time allowances, substantially, are those established as adequate by the car manufacturers and they are set forth in manufacturers' flat rate manuals or labor schedules that were in use in March, 1942. The allowances represent what the industry has generally accepted as the labor time required to complete the repairs. The repair jobs covered range all the way from a minor brake adjustment to the complicated job of installing the crank shaft and bearings.

All shops are required to supply sales slips or receipts to customers for any of the 56 listed operations regardless of whether or not requested by the customer. The slip or receipt must describe briefly the service, cite its number in the new regulation,

the shop's hourly rate, the number of hours charged for, the prices charged for parts and materials, and the total charge.

Automobile repair services not among the 56 listed here continue to be priced as formerly under the services regulation.

One extremely unfortunate effect of this ruling and, one which is directly opposed to other governmental regulations, would be to reduce the wages of all those mechanics who are being paid on a flat rate basis. Of even greater importance is the adverse effect it would have on the nation's transportation system as many mechanics, rather than accept the forced reduction in wages, will seek employment in other fields.



"Windshield dirty, eh? Wal - - - deuced if it ain't!"

Causes and Cure for Low Pedal On Hydraulic Brakes

WHEN the cops started sticking a one inch block of wood under the brake pedal in order to check on the condition of the brakes in the national brake inspecting campaign, it focused a lot of attention on what caused a low pedal and what could be done about it.

First of all, there are plenty of reasons why pedals go down to the floor board. The main one is that the lining is just plain worn out and has to be replaced. That's easily checked by pulling a drum, and taking a gander at the lining. If only one-third of the lining is left or if the rivets are starting to have intimate relations with the brake drum, then, of course, it's time to put some lining in places where it will do the most good.

Another rather obvious reason for low brake pedal is poor adjustment of the brake shoes, which is easily corrected by adjusting the shoes to get the clearance called for in the little book.

If the low pedal doesn't come under the heading of those two causes, then it's time to do a little expert sleuthing in the hydraulic department—provided, of course, that system uses fluid and not cables to shove the lining against the drums.

In the master cylinder there is a check valve which throws the red light against any air entering the system while the brakes are being bled. Naturally, if air does leak in past the check valve, the pedal will hit the floor boards or come darn close to it, when someone tramps on the pedal. If air

gets into the system in any other way, such as past the wheel cylinder pistons, a low pedal will result. If the fluid level in the master cylinder is too low, air will enter the system and a weak primary cup will cause the same effect as will clogged or dirty intake and by-pass ports in the master cylinder. Old hoses, that expand will also cause a spongy or low brake pedal.

There are two other points which have to be checked when trying to get the low-down on a pedal that won't stop until it hits the floor. The first of these is a poorly adjusted pedal rod and brake drums that have been cheating the junk yard.

The brake pedal rod should be adjusted to give $\frac{1}{4}$ in. to $\frac{1}{2}$ in. free play of the pedal before it actually goes to the work of pushing brake fluid through the lines.

The other condition: the brake drum, is one that is frequently overlooked. The reason behind this is that brake drums which have been turned down too often are weak, and will expand or increase in diameter when the brakes are applied, so that in extreme cases the brake pedal will start to kiss the floor boards. Even brand new drums will expand so it doesn't pay to mess with old ones which have been turned down too often.

On mechanical brakes, a low pedal will be caused by worn linkage or conduit, stretched cable, bent levers, incorrect adjustment, thin drums, worn brake lining or incorrectly set equalizers.

MOTOR AGE

PICTURE GALLERY



Possibly this is the inspiration of many of the back-to-the-farm movements. We'd go back ourselves if we'd be sure that lovely Vivian Austin would be there to welcome us.

One of the few floating roads in the world will soon be a thing of the past when the new solid highway through the great Dismal Swamp in North Carolina is completed.

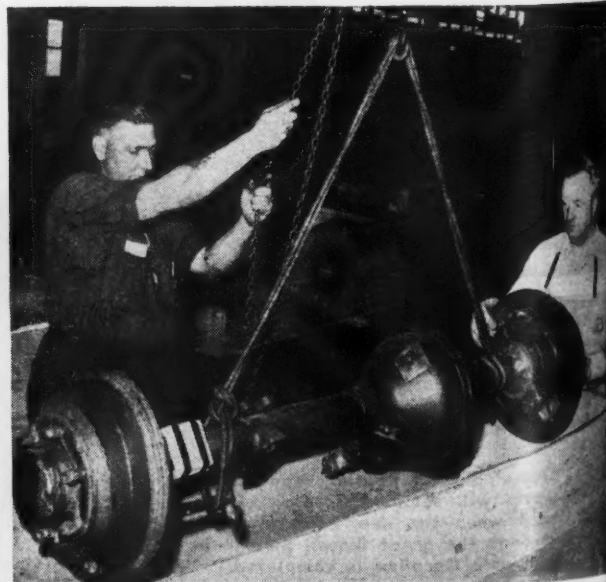




A welcome addition to many meatless tables were these channel bass totaling 1,512 pounds. Caught in Oregon Inlet, N. C., the four lucky fishermen had to charter a truck to bring back the catch. Nice catching!

Servicemen everywhere are seeing that cars remain in good condition. Here, Dave, a dog owned by Sgt. Ira Morton, of Albuquerque, N. M., who is serving overseas, is making certain his master's car will stay in perfect condition until he returns. The car is parked at the dog's kennel where the dog is boarded.

Motor vehicle parts are extremely vital on the home front, but even more so on the battle fronts over the world. Sturdy crates insure the safe arrival of many parts. At the Twin Cities Ordnance plant, two workers are shown speeding the materiel, reclaimed from stockpiles in Alaska, on its way to the combat zone.



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ork-
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Here in the U. S., tires are still a headache but not so for the driver of this "Aea-size" taxi who has two spares while over here we have only one. This Philippine taxi runs on Japanese gas found in quantities.

"If you drive 'em, you got to know how to fix 'em," seems to be the theme of the auto mechanic giving pointers to some girl student drivers of North Carolina's school transportation system. The student drivers, 16 to 18 years old, are paid \$13.50 a month for their part-time driving chores. And according to records they're driving safely.



FRANK

THE FIXER

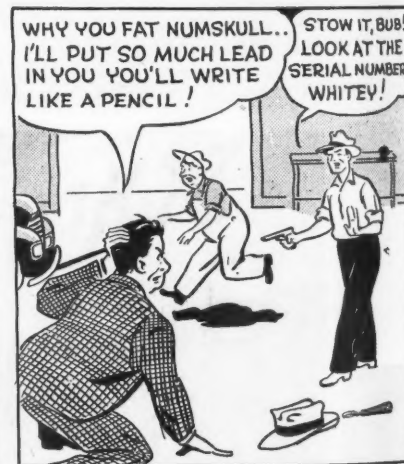
STORY BY J.E. FORD
DRAWN BY AL. CASSEL

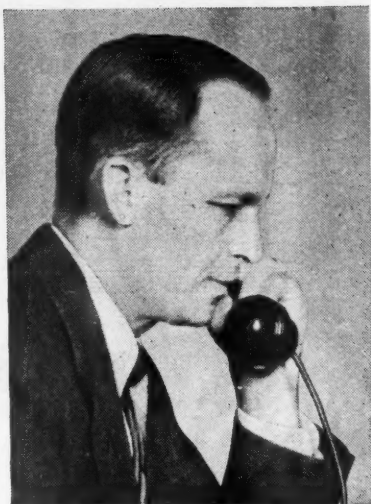
BOYS, KEEP A SHARP LOOKOUT FOR BENNIE "THE BLOOD"! HE HELD UP A PAYROLL CAR SINGLE-HANDED AND IS HEADING THIS WAY IN A STOLEN CAR...

THAT'S THE SERIAL NUMBER OF THE CAR... BE CAREFUL, THIS GUY IS PLENTY TOUGH.

IF HE COMES OUR WAY WE'LL HANDLE HIM OKAY!

13533





Bill Toboldt, Editor, Motor Age

THE READERS'

CLEARING HOUSE

of Servicemen's Queries



Water Circulation

We have a 1936 Pontiac that throws the water out of the overflow tube. We had the radiator steamed out, but this did not stop the trouble.

Someone advised us to take the water circulating tube out of the block, which we did, and that appears to have stopped the trouble. But how is this going to affect the motor in the summer? Will the back of the block run too hot?—A New Jersey Subscriber.

YOU should replace the water circulating tube in this engine in order to have efficient water circulation throughout the block, particularly around the valves. This tube is sometimes the cause of overheating trouble, but, if you remove it and do not install a new one, I feel sure you will run into cooling difficulties during the warm weather. Without it there is a strong possibility that you will burn some valves.

Cylinder Numbering

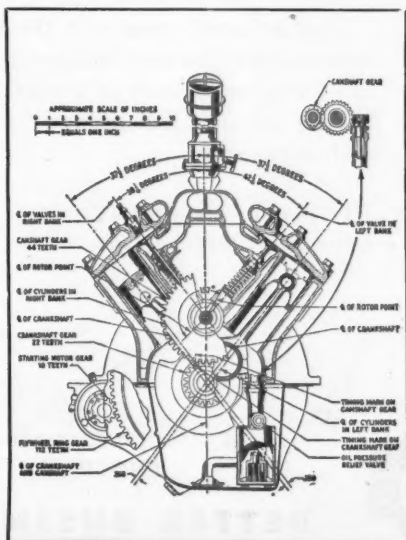
Will you please tell me the cylinder numbering system used in the 12- and 16-cylinder Cadillac, and the Lincoln-Zephyr? Which cylinder is No. 1?—A Pennsylvania Subscriber.

THE front cylinder of the left bank is known as No. 1 cylinder, and this applies to the Cadillac as well as to the Lincoln-Zephyr. The firing order is usually given with the letters "L" and "R" after the number, indicating the left or right banks of cylinders.

Acceleration Trouble

I have a 1939 Model 60 Cadillac which has a miss on an acceleration at about 40-50 m.p.h. I have installed several sets of spark plugs of different types, a new coil, new condenser, new points and have checked the carburetor and the fuel pump on an analyzer. Nothing seems to correct this trouble.—A Pennsylvania Subscriber.

YOUR letter does not mention that any work has been done to the valves in this engine, and it is my opinion that this trouble is caused by a valve that is sticking. I suggest that you clean the carbon and grind the valves, as I believe this will correct the trouble. In addition it would probably be advisable to drain, flush and refill the crankcase, avoiding the use of heavy oil.



Low Oil Pressure

I have a '37 Ford 85. We have installed new bearings, mains and rods and the car doesn't have enough oil pressure when it is warmed up.

The oil pressure seems to be sufficient when car is cold, but when car warms up, oil pressure drops back. Could you offer me solution for this trouble?—Ken Silbaugh, R No. 2, North 2nd, Rockford, Ill.

IN connection with the low oil pressure you are experiencing on a 1937 Ford, it is quite possible the trouble is caused by a worn oil pump. It is also possible that it is the result of a worn crank shaft or connecting rods which are no longer round at the lower ends.

I would suggest you make an oil pressure test on this engine in order to see just where the oil is leaking and in that way you will be able to locate your trouble very quickly.

If you do not have an oil pressure tester or "leak detector" as they are also known, I would suggest you get in touch with your local automotive parts jobber who undoubtedly has one you can borrow.

Engine Installation

I have a 1934 Plymouth, Model P.E., 4-door sedan, in pretty good condition but motor needs complete overhaul, rebore, etc. I can't get job done or do it myself because of lack of manpower and no time on my part.

I have a chance to pick up a 1939 Plymouth engine, Model P 11 with a standard shift. I want to know if it is possible to install this engine in my car, also what changes have to be made, if any?—Samuel Arabian, 90-12 196th St., Hollis 7, N. Y., N. Y.

(Continued on page 40)



All that "fritters" isn't gold bricking

• You can see your employees aren't idle—yet their productive record shows hours of unaccountable work . . . time frittered away. Gold bricking? It's doubtful because, too often, an outside agent controls their ability . . . for the worst.

Forms—obsolete forms—may well be the culprit here. Forms that don't do the job they should . . . don't properly furnish departmental co-ordination, don't give the hows and whens of business transactions—cause needless and unnecessary work—hold up and slow down essential operations

throughout the entire organization.

If you—like many busy executives—have always regarded forms as mere adjuncts to routine, Uarco may have something new to show you. For Uarco has made a science of creating better forms . . . prefabricating papers and carbons into forms that keep the flow of work moving smoothly, efficiently from purchasing to production.

Half an hour spent with the Uarco representative in examining your present forms may result in a substantial saving of time and money for you. Call him—soon.



for instance . . .

Here's one of Uarco's many time-saving forms . . . the Multi-Link. It's especially useful when forms must be typed continuously. Carbons are inter-leaved—papers aligned—no special equipment needed. Forms neatly stacked behind the typewriter feed the machine as the typist types. For added information, write today.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • Offices in All Principal Cities



AUTOGRAPHIC REGISTERS



SINGLE SET
FORMS



CONTINUOUS-STRIP FORMS FOR
HANDWRITTEN • TYPEWRITTEN • BUSINESS MACHINE RECORDS





BETTER BUSINESS FORMS

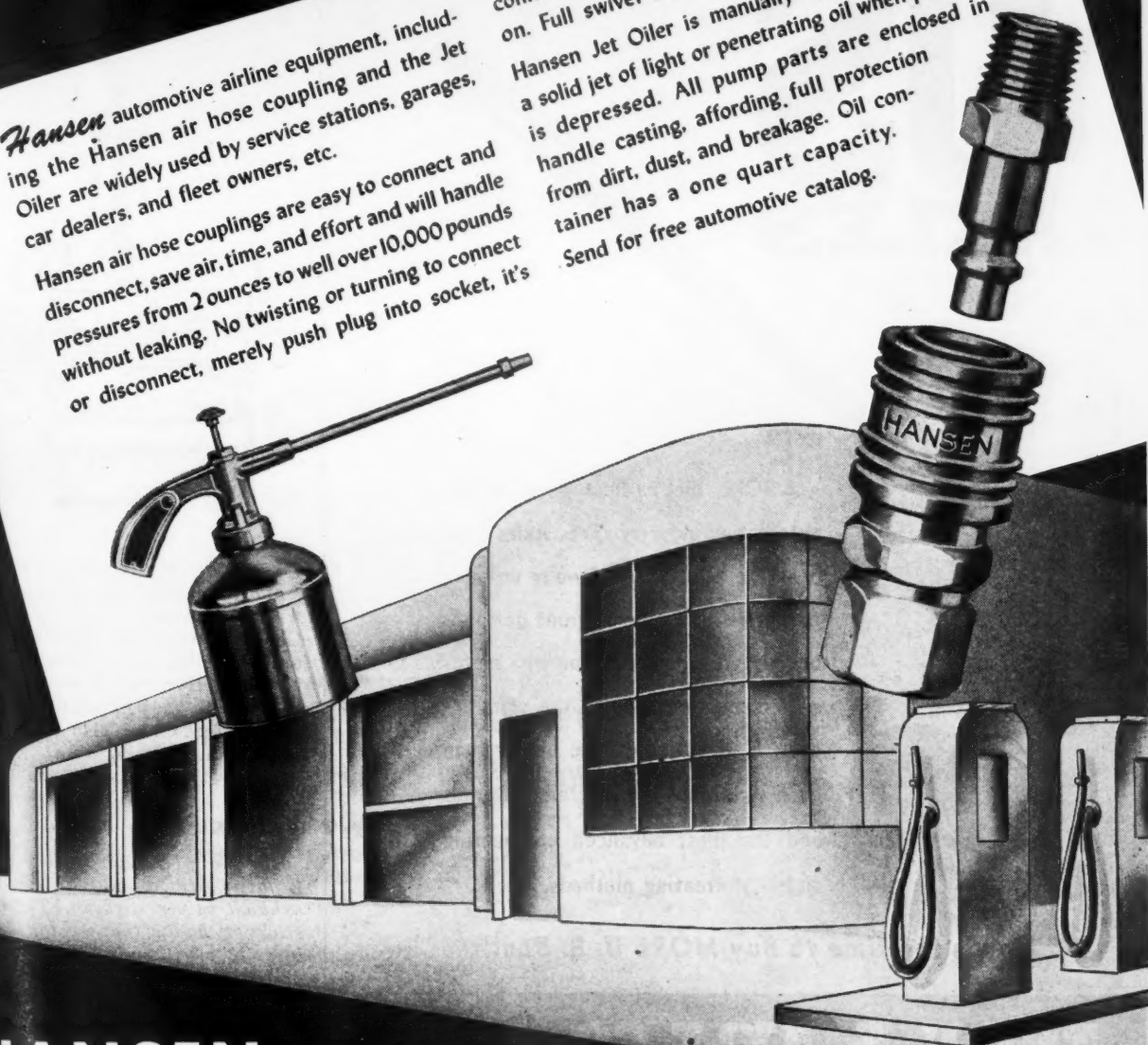
HANSEN

Automotive AIRLINE EQUIPMENT

Hansen automotive airline equipment, including the Hansen air hose coupling and the Jet Oiler are widely used by service stations, garages, car dealers, and fleet owners, etc.

Hansen air hose couplings are easy to connect and disconnect, save air, time, and effort and will handle pressures from 2 ounces to well over 10,000 pounds without leaking. No twisting or turning to connect or disconnect, merely push plug into socket, it's

connected, locked, and air is automatically turned on. Full swivel action prevents kinking of hose. Hansen Jet Oiler is manually operated, projects a solid jet of light or penetrating oil when plunger is depressed. All pump parts are enclosed in handle casting, affording full protection from dirt, dust, and breakage. Oil container has a one quart capacity. Send for free automotive catalog.



HANSEN MFG. COMPANY
1786 E. 27th STREET • CLEVELAND 14, OHIO

Clearing House

(Continued from page 37)

AFTER a careful check, I find that the engines in the 1934 and 1939 Plymouth cars are not interchangeable. To put the 1939 engine in your 1934 chassis would involve a great deal more work than overhauling your 1934.

Turbine Pump Motor

We are concerned about a motor problem and could you advise us the proper solution? Will a Chevrolet 95

horsepower motor be sufficient for an 8 in. turbine pump with 90 ft. pump setting, delivering 300 gallon per minute, with 100 lbs. at pump discharge? The pump runs 1760 r.p.m. on 8 in. pulley. The manufacturer recommends a 35 to 40 A.P. motor. How fast should this motor run and can it be run from direct shaft or through transmission?—E. H. Rountree, Rountree, Chevrolet Sales, Hanover, Mich.

I SEE no reason why you should not use a Chevrolet engine to operate the turbine pump described in your recent letter. The Chevrolet de-

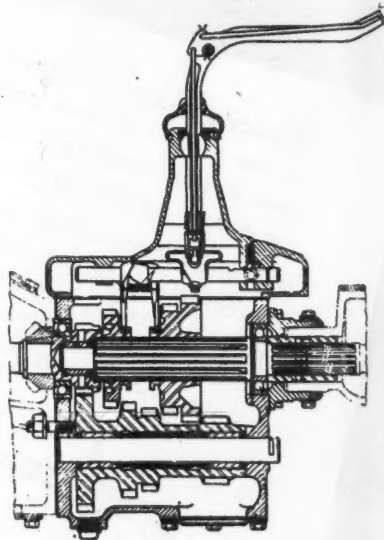
velops its maximum torque at 1200 r.p.m. and I think if you run the engine at that speed you will not have any difficulty.

With the engine running at 1200 and your pump at 1760 r.p.m. and seated with an 8 in. pulley you should equip your Chevrolet engine with a 5.45 pulley.

You could run this through the transmission which would, of course, have to be in direct gear and place a pulley at the rear of the transmission.

Gear Jumps

I have an Allis-Chalmers W. C. Tractor in which I have put all new bearings in the transmission and all new gears, except second, high and reverse and now it jumps out of second. Could you tell me what step I should take next?—T. C. Cangelosi, Hearne, Texas.



FROM the description you have given of the trouble you are experiencing with the transmission on the Allis-Chalmers tractor it would seem that quite possibly your second speed gear is worn. However, I would also suggest that you carefully check the shifter forks and also the transmission main shaft.

Valves Stick

We have a 1937 Packard Super Eight which is giving trouble with exhaust valves sticking. These valves stick so badly that it takes a 6-ft. lever to pry them out. The stems get very dry and a hard deposit forms on the stem. When this gets thick enough, the valves stick.

Have tried various oils, and have counter-bored the valve guides to a depth of $\frac{3}{8}$ in., but this did no good.—An Ohio Subscriber.

(Continued on page 44)

US AXLES



FROM the earliest days of the automotive industry U. S. Axles have been the finest. Today we're not able to handle all the home front demands because the demands for war materials come first. When the wars are over, U. S. Axles will be better than ever, improved by better materials and the most advanced engineering and heat-treating methods.

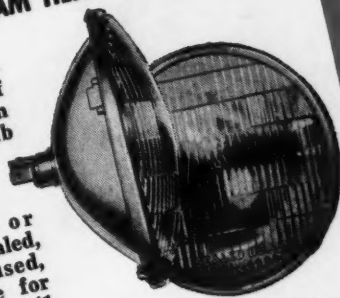


Now's the time to Buy MORE U. S. Bonds!

**THE U. S. AXLE CO., INC.,
POTTSTOWN, PA., U. S. A.**

AUTO-LITE SEALED BEAM HEADLAMP UNITS

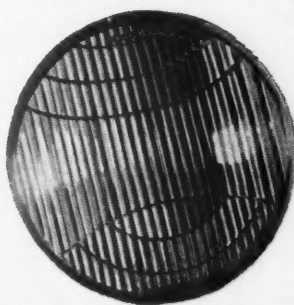
Durability is the outstanding feature of Auto-Lite Sealed Beam Units. Separate bulb construction keeps the light functioning even when the lens is cracked or broken. Securely sealed, accurately prefocused, they are available for replacement on '40, '41 and '42 cars and trucks.



AUTO-LITE

AUTO-LITE ORIGINAL EQUIPMENT LENSES

Legal throughout the United States and Canada, Auto-Lite original equipment lenses are available for replacement on 127 types of cars, trucks and buses. Lenses and headlamps are both marked with trade name under which they are officially approved by Highway Departments.



AUTO-LITE FOG AND DRIVING LIGHTS

As soon as materials are released, Auto-Lite Fog and Driving Lights will again be manufactured. These lights, noted for the contribution they make to highway safety, come complete with wiring, switches and brackets for easy mounting.



SEND FOR THIS

FREE

SERVICE BOOK

It tells you how to remove and replace sealed beam units; shows original equipment lenses for 127 types of cars and trucks. Send for your copy today.



THE ELECTRIC AUTO-LITE COMPANY
CLEVELAND, OHIO
Merchandising Division

See in "Everything For The Boys" Starring Dick Haymes —
Every Tuesday Night—NBC Network

She's got four "B's" in her bonnets!

She comes of a long line of battle-tested veterans with a gallant record over Europe, Africa and the lands and waters of the Far Pacific.

Thousands have gone before her — to strike their mighty blows for freedom, and to make that name "Liberator" famed and feared the world around.

As you may have guessed from the headline—Buick powers the Liberator.

As of June first, Buick factories and Buick people have sent forth approximately 75,000 Pratt & Whitney aircraft engines, destined with few excep-

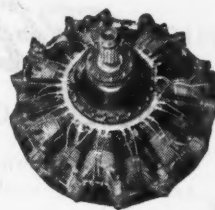
tions to find their places in the four nacelles of these far-ranging B-24 bombers.

It has been a proud assignment, and a solemn one.

For our pride has been tempered by the constant knowledge that men's lives sometimes would depend on the way we here at home did our share of the job.

So our pride isn't in the numbers—important though volume may be to victory. It's in the way letters have been coming back from men who fly these B-24 bombers—men who take time off from the grim chore of fighting to tell us that those "B's" in the Liberators' bonnets are making good.

There's something pretty wonderful about having such a great gang for friends.



The Army-Navy "E" proudly flies over all Buick plants

BUICK POWERS THE LIBERATOR

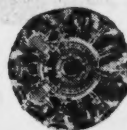
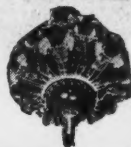
WHEN BETTER AUTOMOBILES ARE BUILT BUICK WILL BUILD THEM

Every Sunday Afternoon — GENERAL MOTORS SYMPHONY OF THE AIR — NBC Network



Other Jobs on BUICK'S Work-Sheet

In addition to supplying all the engines for the Liberator, Buick is now producing the Pratt & Whitney engines shown at left. At the top is a heavy-duty power plant developed for use in the cargo-carrying twin-engine Douglas C-47. The engine at the bottom goes into the big 4-engine Douglas Skymaster—the C-54 military transport that doubles as troop carrier and ambulance plane.



BUICK DIVISION OF GENERAL MOTORS



A RINGER EVERY TIME

Be the best darn trouble shooter in the business—
rely only on McQUAY-NORRIS Rings. They give
your job more power—give you more profit—and
they've never been topped in performance yet!

LOOK TO McQUAY-NORRIS

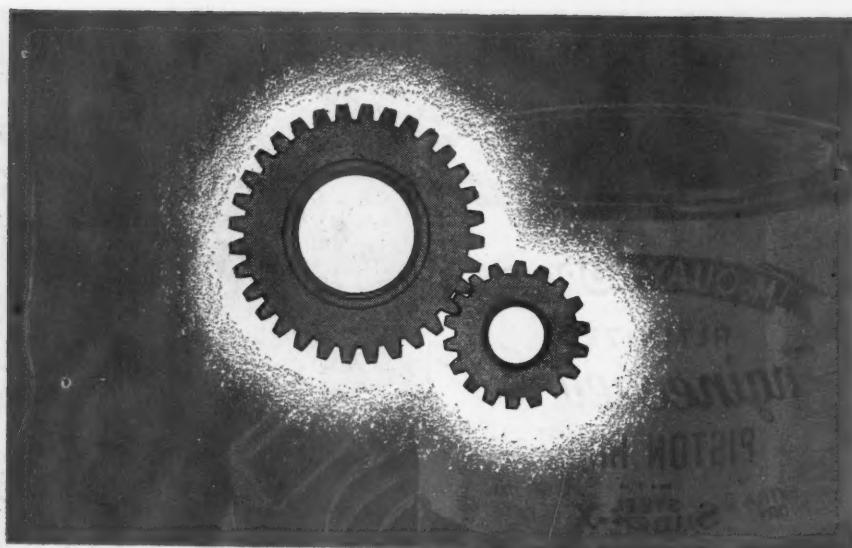
FOR THE RING OF THE FUTURE



Your **McQUAY-NORRIS** Jobber

ALWAYS NEAR—ALWAYS READY





GEAR FEEDS CAN'T SLIP

A positive gear-tooth disc clutch plus a rack and pinion feed eliminates all slippage from Lempco Brake Drum Lathes. A 130-pound carriage is mounted on dovetailed ways. One piece solid base. Spindle is mounted on matched Timken bearings.

FASTER . . . TOO . . .

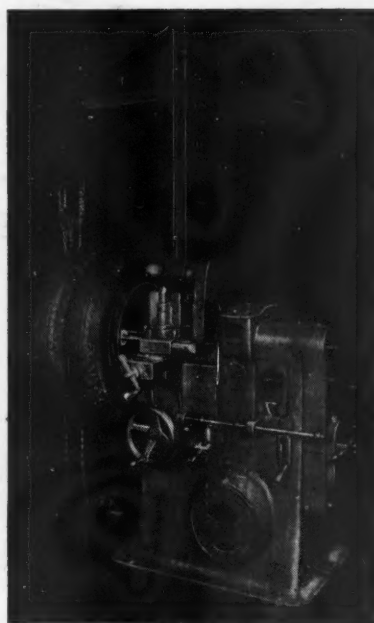
. . . with a top speed travel of 1.75" per minute. Turns and grinds, wet or dry, any size car and truck drums—tires, wheels, and all. Better order one now while they're still ceiling-priced!

**11 DIFFERENT OUTFITS
\$335.50 TO \$2900**

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LEMPCO

5727 Duham Road • Bedford, Ohio



MODEL C

PICTURED ABOVE AVAILABLE WITH
OR WITHOUT CRANE & HOIST

Patents Make Jobs

Clearing House

(Continued from page 40)

SINCE you have made several attempts to correct this condition, before you do anything else, I suggest that you change to a different brand of oil and gasoline. There is a difference of opinion as to whether the deposit of varnish is caused by oil or by gasoline, and, in your particular case, I suggest any good grade of oil that uses an inhibitor to prevent the formation of varnish, and a different grade of gasoline from that which

you are now using. I would give this a trial before attempting any further mechanical work.

In addition to this, I would, at regular intervals, give the engine an application of a solvent oil through the carburetor to help keep the valve stems and piston rings clean.

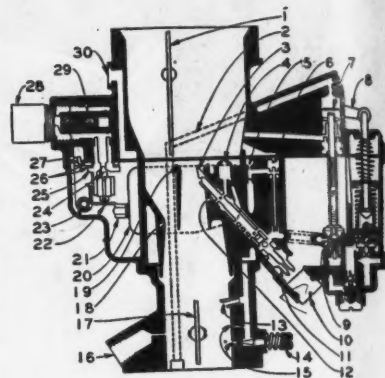
Carburetor Balks

I am having trouble with a Buick 40-40 carburetor. When it is parked on uneven ground, I cannot start the car. When on even ground, it starts

immediately. Any information will be appreciated. — A Michigan Subscriber.

THE fact that this car will not start when it is standing on uneven ground is indeed unusual.

I would recommend that you make a thorough and complete check of the entire ignition and starting system to make sure that there are no high-resistant or poor connections at any point. I would pay particular atten-



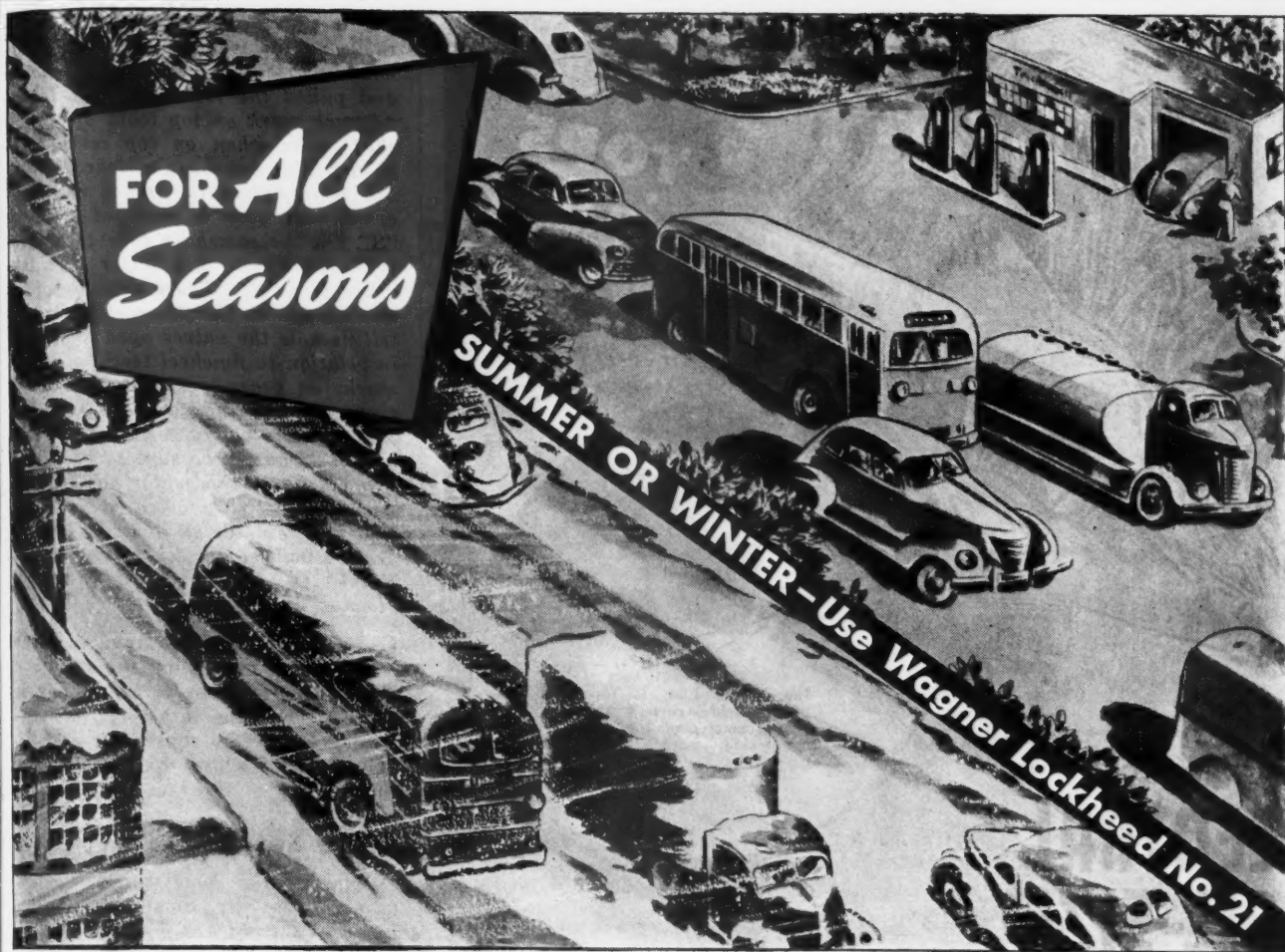
tion to the battery connections and the battery ground connections. I would also recommend a careful check of the distributor to make sure that there are no fine wires which might cause a ground when the car is on a slant. I would also recommend a careful check of the carburetor system, making sure that the accelerator pump operates and supplies a good stream of fuel, regardless of the position of the car, and also make sure that the float needle valve does not stick.

Cylinder Cuts Out

Do you know why a '32 Plymouth, 4-cylinder should cut out on number 3 cylinder? Have new points and cap, ground valves, cylinders have good compression. I thought it might be a valve sticking for when you grind the valves it runs good for about three miles then skips again. Several garagemen have looked at it and worked on it. Gaskets are new, valve stems look perfect and straight. The distributor is O.K. Do you know any reason or remedy for this? It's been bothering for some time.—William R. Oliver, R.D. 1, Cleveland, N. Y.

IF you are absolutely sure that the compression is up to standard in the No. 3 cylinder on the 1932 Plymouth, I would suggest you check to make sure there are no vacuum leaks that would effect that particular cylinder. In this connection I would pay particular attention to the intake manifold gasket and also the connection for the windshield wiper.

Occasionally a cracked block will
(Continued on page 46)



WAGNER LOCKHEED No. 21 HYDRAULIC BRAKE FLUID *is an All-Season Fluid*



You'll save money, time, and space when you reduce your inventory by stocking Wagner Lockheed No. 21 Hydraulic Brake Fluid—the all-season fluid that eliminates the need for carrying one type of fluid for summer, another type for winter. No. 21 does the whole job. It is unsurpassed for service any time of the year in any climate where cars, trucks, and buses can operate. No. 21 is also a universal fluid—one type is suitable for all makes of cars, trucks, and buses having hydraulic brakes.

No. 21 is the ideal hydraulic brake fluid because it amply lubricates the system over the operating range of temperature, maintains chemical characteristics under the most severe operating conditions, and mixes with other fluids approved by vehicle manufacturers.

Because of its superiority, No. 21 is used by car, truck, and bus manufacturers. It is warehoused throughout the U. S. and Canada, and, like Lockheed Hydraulic Brake Parts and CoMaX Brake Lining, is available everywhere through Wagner jobbers.

Wagner Electric Corporation

ESTABLISHED 1891

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Remind your customers "BRAKE FLUID SHOULD BE CHECKED TWICE A YEAR"



A SINGLE
**CENTRAL
 ALL-SIZE**
 HOSE CLAMP
 FITS OVER 100 DIFFERENT HOSE SIZES

SEND FOR

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No. 45-6MA

● Like the jungle lion, the ALL-SIZE is tops in the field. It has unmatched clamping power; fastest clamping action; plenty of take-up; goes on or off in the least time, without disconnecting the hose line; is easiest to use in hard-to-get-at places; is leak-proof, rust-proof, self-locking; won't strip or loosen.

● Best of all—because a single size ALL-SIZE does fit over a hundred different hose sizes—it offers every advantage to jobber, dealer, fleet owner and mechanic . . . eliminates the need for big clamp inventories, saves time and labor, gives lasting satisfaction every time on every job!

CENTRAL EQUIPMENT CO. 900 S. WABASH AVE.
 CHICAGO 5, ILLINOIS

Clearing House

(Continued from page 44)

cause the trouble you are experiencing and I would suggest you check carefully around the intake port for No. 3 cylinder.

It is also possible, that the trouble might be caused by a cracked distributor cap or a badly worn distributor shaft bushing, or distributor shaft cam. However, I am most inclined to believe that the trouble is a vacuum leak of some sort.

Correct Timing

A 1941 2-cylinder Crosley started to knock while idling and the knock got so bad we shut the motor off. It sounded like something broken and heavy. We pulled the base and found nothing—but the heads and valves had great bunches of hard carbon much larger than the valve ports—had to use puller to remove the valves. We did a good valve and carbon job and then discovered no compression on either cylinder and couldn't start

the car. It would spit and fire but not run. We figured "out of time" and pulled the front end and found a punch mark on top tooth of crankshaft gear when on top center but no mark on camshaft matched it. At $4\frac{1}{2}$ teeth before the punch mark on crankshaft gear is stamped a letter "S". On the camshaft gear there are two marks, one is a letter "S", the other is a "C". There are no marks we can find on the flywheel. Can you tell us how the valves open and close in relation to flywheel teeth or which marks on gears mesh? Pistons, pins, rings and bearings are all O.K. We can time the valves so the motor will run but want to be sure to have correct timing as this motor has so little power (12 H.P.) when it is right that it sure needs all of it. Your suggestions will be greatly appreciated.—Ralph D. Brown, West Harwich, Mass.

I AM sorry we don't have the gear markings for timing the valves on the Crosley; however, the timing is correct when the intake valve opens 15 degrees before top center and the exhaust valve closes 15 degrees after top center.

Valve Setting

I would like some information on adjusting tappets. Some manuals give the cold setting but I like to adjust tappets with motor running and thoroughly warm with vacuum gage. For example, Willys American, 1941, gives .014 cold setting. What would the hot setting be? Also, what harm, if any, would be caused by removing the fine mesh screen in breather pipe on valve cover on a Willys? It was plugged solid with cold sludge—I mean sludge formed by motor not ever getting warmed up any for short runs. In other words, war-time driving. It looks like you would need more ventilation for this type driving by removing screen. At least, it won't plug up.

I would appreciate any information you can give me on the two subjects I mentioned.—Glyn W. Vinis, 3950 Holledale Ave., Los Angeles 37, Calif.

UNFORTUNATELY car factories are not uniform in giving specifications on valve settings. As you point out, some of them say they should be set hot and others, cold. In many cases mechanics will add .001 in. to the specified hot setting and then set the valves cold. Such cases have not resulted in any appreciable loss in power or noise.

In regard to leaving out the copper-mesh filter from the crankcase breather on a Willys. This is not advisable because dust will probably be drawn into the crankcase. It is much better to thoroughly wash the copper-mesh in gasoline and then replace it.

(Continued on page 48)

The World's Best-Known Customers attract New Customers to Champion Dealers

The new prestige gained by Champion Spark Plugs in the service of our armed forces brings new prestige to Champion for every engine in such ads as reproduced at left and scheduled in Saturday Evening Post, May 12, 1945—Collier's, May 5, 1945—Life, May 7, 1945—Look, May 15, 1945—American Magazine, June 1945—American Legion, May 1945—Pathfinder, March 26, 1945—Liberty, May 5, 1945—Popular Mechanics, May 1945—Popular Science Monthly, May 1945—Mechanix Illustrated, June 1945—Grit, May 14, 1945—D.A.C. News, May 1945—Highway Traveler, April-May 1945—having a combined circulation of 20,309,074.

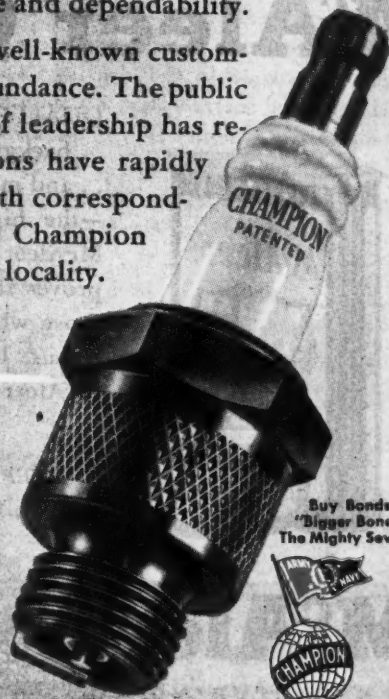
The use of Champion Spark Plugs by our air forces in the world's foremost combat ships and bombers, and by such famous air lines as Pan American, American, National, United and Western, brings new prestige to all Champion Spark Plugs. For the public quickly recognizes that spark plugs for aircraft must represent the acme in performance and dependability.

It is an old sales axiom that prominent and universally well-known customers for any given product will attract new customers in abundance. The public admires and respects leaders. Champion's long period of leadership has received enormous impetus from the fact that Champions have rapidly become the foremost spark plug for aircraft engines, with corresponding advantages for automotive engines. That's why the Champion Spark Plug dealer occupies an enviable position in his locality.

DEPENDABLE

CHAMPION SPARK PLUGS

IT PAYS YOU WELL TO STOCK AND SELL CHAMPIONS



Buy Bonds
"Bigger Bonds for
The Mighty Seventh"



Clearing House

(Continued from page 46)

Timing Gear

I have a factory reconditioned cylinder assembly in my '36 Lincoln-Zephyr. Since it was first installed this motor has run badly at any speed below 18 m.p.h. Symptoms are those of mixture dilution. In order to get it to run at all at its "racing" idle, the low speed system of the carburetor must be wide open, even so the mixture seems too lean and motor misses even at road speeds of 20 to 22 m.p.h.

Operation is so rough that it is hard to locate the offending cylinders, but numbers 3 and 10, which follow each other in firing order, seem to be the worst.

Valve seating, valve clearance, inlet manifold, carburetor, ignition system from switch to plugs, low compression and uneven compression have been completely eliminated as factors. Exhaust system is clear. Gas consumption in town is excessive, long haul gas consumption is about 15% higher than with original engine. Temperature is normal. High speed performance is good. New assembly

has been run about 1000 miles.

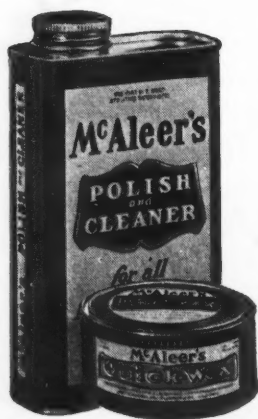
The timing gear is a "bolted on" type indicating that perhaps the camshaft was of the type designed for use in later motors with hydraulic lifters. Study of specifications reveals that the timing of the late camshaft differs widely from that designed for "hard" lifters used in the '36 and '37 motors. In addition to the designed differences there is, of course, the factor introduced by the fact that these "fixed" lifters are set up with specified clearance while the later type shaft is a no clearance job.

It has been suggested that we install a '36 camshaft, our reason is that perhaps the factory is now producing a bolted assembly for timing gear and shaft in these '37-'37 motors.

I have followed the clearing house for years with interest and profit. Your opinion on this puzzle would be appreciated.—S. A. Williams, 111 N. Fort Harrison Ave., Clearwater, Fla.



TRUE REFLECTION OF McAleer Quality!



QUALITY is the product of many things . . background . . research . . development . . and manufacturing to only one standard—the highest! Increasing preference for McAleer Automotive Finishing Materials, proves this policy to be sound—both for those who sell and use our products, and for us. LET US PROVE—TO YOU—the McAleer Line is a Business Builder.

KEEP BUYING WAR BONDS
AND KEEP THEM!



Bus Engine

I am having trouble with a 1941 Studebaker bus. This bus makes a ninety-mile trip each day over mountain roads. It has had three new motors put in it and when they are driven around 40,000 miles they have been re-ringed and valve jobs and when they are worked on there is never any oil pressure, but oil pressure is good until the motor is worked on. There is a motor in the bus which we put in new and was driven four months. It started using oil and we took the motor down and re-ringed it. It had no oil pressure and they drove it four trips and burned out the rods. I haven't done any work on the buses but have this one in my shop now and would be very glad if you would advise what to do.—Oscar Weather-spoon, Hardy, Ark.

(Continued on page 50)

Here's Where the Trouble Starts!



*And here's where
Trouble Starts on
an Oil Pumper*



Good mechanics say that the sure cure for oil pumping is to install new piston rings PLUS replacement of worn engine bearings. Here's why worn connecting rod bearings cause oil pumping: They let excess oil flood cylinders and combustion chambers. It burns to carbon on valves, spark plugs, pistons and piston rings, and can prevent the best of rings from doing their own job. To make sure of correcting oil

pumping where it starts, to let new rings work at full efficiency, and to restore power, pep and economy, install Federal-Mogul Oil-Control Bearings . . . they are engineered to do the job! (Service bearings are a critical war material. We are doing all we can to maintain the supply.)

FEDERAL-MOGUL SERVICE • DETROIT 1, MICHIGAN
DIVISION OF FEDERAL-MOGUL CORPORATION

Replace With Genuine
FEDERAL-MOGUL
Oil-Control Bearings



For the Final Push . . . BUY WAR BONDS NOW!

Clearing House

(Continued from page 48)

THE first thing I would suggest you do on the Studebaker bus would be to make an oil leak test. This will tell you better than any other method whether there are any oil leaks at any of the bearings and knowing that, it is, of course, an easy matter to make the necessary replacements.

It is my belief that because of excess clearance on the sides of the bearings that you are losing oil pressure. I would also recommend rebuilding

the oil pump each time you overhaul or re-ringing the engine so as to be sure that it is pumping sufficient oil.

Do not attempt to adjust the main bearings on these engines because they are of the slip-in type and if you file the bearing caps you will get excessive clearance at the sides and oil pressures will drop. The same applies to the connecting rods. While these are of the poured type it is better not to adjust them. However, if you will make the oil leak test both before and after you overhaul the engine, it will show just where your oil pressure is going.



...he doesn't know

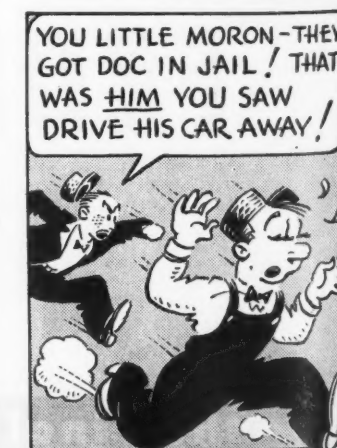
GRAFILD
BRAKE LININGS
will stop 'em!

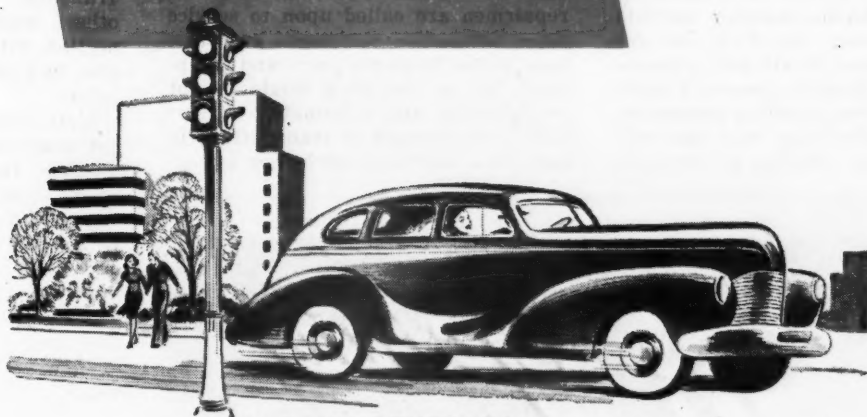
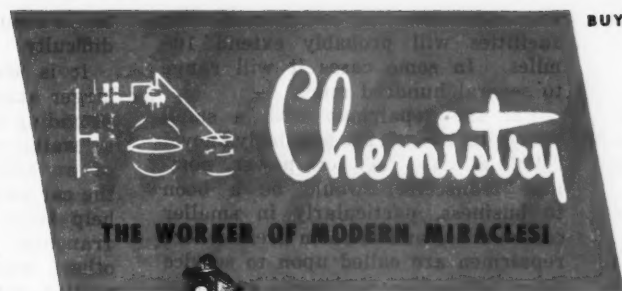
Skid flops to a stop—but who wants pancake landings for his customers? Give 'em GRAFILD for sure-fire braking at the touch of a toe. Get in line—reline with GRAFILD.

WORLD BESTOS CORP.

PATERSON • NEW JERSEY

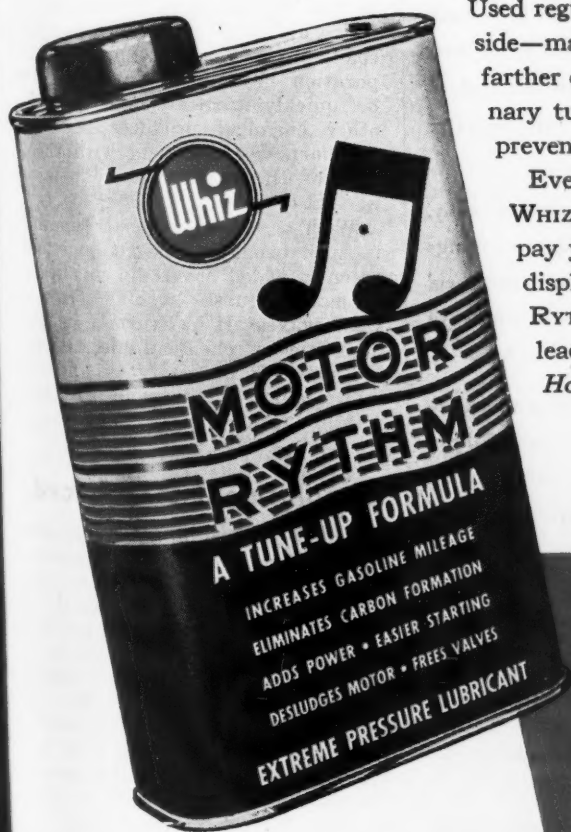
BUTCH...





WHIZ MOTOR RYTHM

KEEPS ENGINES CLEAN INSIDE!



WHIZ MOTOR RYTHM is the modern, *chemical* way to get rid of carbon and other harmful engine deposits! Used regularly, MOTOR RYTHM *keeps* engines clean inside—makes them run better . . . last longer . . . go farther on less gasoline! And MOTOR RYTHM is no ordinary tune-up oil. It contains *two* solvents . . . a rust preventive . . . and a super lubricant.

Every truck, tractor, or passenger car owner needs WHIZ MOTOR RYTHM the year 'round. That's why it will pay you to stock up on MOTOR RYTHM and keep it on display where it can be seen. *Feature* WHIZ MOTOR RYTHM! And tie in with MOTOR RYTHM advertising in leading national publications and on the radio. *R. M. Hollingshead Corp., Camden, N. J.; Toronto, Can.*



MOTOR RYTHM

A PRODUCT OF

Hollingshead

LEADER IN MAINTENANCE CHEMICALS

MANUFACTURER OF FLOOR WAXES • POLISHES • DISINFECTANTS • INSECTICIDES • SOAPS • CLEANERS • HYDRAULIC FLUIDS • RUST PREVENTIVES • RADIATOR SPECIALTIES • SPECIAL PURPOSE OILS

Two-Way Radio

(Continued from page 22)

passed. Allocation of channels for receiving and transmission are already a matter of discussion with FCC officials.

Repairmen will naturally voice the question about permits and technical knowledge. Radio operator permits will be necessary, the FCC has reported. However, it will not be necessary for individuals to possess a radio mechanic's license as utility companies will undoubtedly take over this end of maintenance. Radius of the two-

way radio receiving and transmission facilities will probably extend 100 miles. In some cases it will range to several hundred miles.

For the repairman with a small operating budget, the popularly known "Walkie-talkie" set low power, portable transceiver would be a boon to business, particularly in smaller communities and in farm areas where repairmen are called upon to service farm automotive equipment and tractors. Round trips for parts and equipment left at the shop would be cut considerably, and information in service manuals could be transmitted via radio to a mechanic perched on a trac-

tor in some distant field without much difficulty.

It is also not impossible that the larger automobile clubs may consider providing their touring members with a "walkie-talkie" so that in the event of an accident in an isolated place, the car owner will be able to summon help from a shop having the club's franchise. Salesmen, doctors and others who use automobiles in connection with their daily work would also find such a device of occasional value.

Unit and installation costs are as yet unannounced but with mass production facilities available and a ready market, radio communication sets will not be out of reach to repairmen. Its practical uses will enable shop owners to increase their scope of business and keep abreast of the automotive trade when production lines start dispatching streams of new cars into the nation's highways.

R. M. Hollingshead

Richard Milton Hollingshead, Sr., founder and president of the R. M. Hollingshead Corp., of Camden, one of the country's leading producers of automotive, household and industrial chemicals, died May 15th at Pennsylvania Hospital in Philadelphia, Pa. He was 77.

Born in Millville and a resident of Camden in his youth, Mr. Hollingshead began his industrial career when he was 20. When he started in business, his only product was saddle soap, but after he founded the corporation bearing his name in 1888, he quickly turned his attention to other chemical products needed by the harness trade, and with the advent of the automobile, to new ones in that field.

With a well-established reputation in such products, the company more recently added household chemicals to its manufactures—such as sprays and wood waxes. It has turned out great quantities of chemical specialties for the armed forces, and its founder had laid plans for post-war production relating to airplanes.

Appointment Announced

Robert B. Cragin, vice-president in charge of commercial development of Houdry Process Corporation, Wilmington, Del., has announced the appointment of a well-known petroleum engineer, Henry D. Noll, who has become manager of the project analysis department for Houdry. Mr. Noll brings with him nearly 20 years of experience in plant operation, technical service and petroleum research and development. Prior to coming to Houdry, Mr. Noll was in New York with the manufacturing department of Socony-Vacuum on special wartime assignments.



Gabriel
AEROTYPE HYDRAULIC
SHOCK ABSORBERS



Shocks Protect Tires

Nothing shortens tire life more than driving with worn, leaky, mal-adjusted shock absorbers. The experienced driver insists on Gabriels, and installs them when, and as he can get them.

ime was, when you thought of a shock absorber as something to save the rider. Now you know Gabriel Aerotype Hydraulic Shock Absorbers are engineered to save the car—and save the tires, too.

Erratic steering, wheel hop, curve sway, brake dive, and spring breakage are things that happen when all four shock absorbers are not working. The remedy—a new set of Gabriels—sealed-in-steel—will not leak.

With a complete line of hydraulic shock absorbers for cars, trucks and buses, Gabriel will play a big part in keeping traffic moving on the highways after V-E day.

The shock absorber business is the fastest growing line in the automotive parts business. Gabriel is the hottest line in the shock absorber business.

Write or wire today for particulars.



THE Gabriel COMPANY • CLEVELAND 14, OHIO

ESTERDAY, TODAY, TOMORROW

MORROW *Height of Quality*



FROM *A* TO *Z* THE
COMPLETE LINE
Write for Name of Nearest Jobber.

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ER AGE

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UNIVERSAL PARTS, INC., CHICAGO



UNIVERSAL MEANS BUSINESS
for you

Color Can Step Up

(Continued from page 23)

tor is an important one. Consequently soft pastel tones such as a coral or tan could be incorporated to reduce glare. This is true particularly if cold "daylight" fluorescent or mercury vapor lighting is in use overhead. Or, on the other hand, if there is a warm or incandescent system of lighting, cool hues such as green or blue should be used on the walls to arrive at a desired effect. Colors on the walls can be divided into two contrasting tones that compliment the auto

on display. The floor color should also have a complimentary effect on the vehicle featured. Wood trim about the room should always be a shade darker to cut down abuse and soiling. The overall effect produced then will have a cheering effect on the prospective customer. Seeing a new car strikingly contrasted against what appears to be a spacious area, he is in a mood to be sold.

If there are any stairwells in your shop, several specific recommendations can be made. Two colorful paint combinations can be used in these locations to contrast the paints applied in the working areas and will tend

to relieve monotony and fatigue. Bands of yellow paint on the first and last risers of the steps will caution to the climber to be alert. A red or black stripe running several inches above the stair rail will subconsciously hold the attention of the worker, and minimize danger of a fall. A bright cheery stairwell will remind workers to keep it neat and discourage the piling of trash on steps. A two-fold purpose has been accomplished in this instance: creating a cheerful atmosphere, and a reminder to practice safety.

Shop lounges, or waiting rooms, should be painted with deeper and less restrained colors than in working areas. The use of more colorful color tones such as peach, rose, or coral assures variety and relief from monotony. Tests have shown the above colors have a tendency to cut working fatigue considerably.

The application of soft bluish greens in wash rooms gives a cool clean appearance to the room. And if a slightly grayish cast is added to the color, good maintenance of the color can be expected because it will resist soiling and abuse. It also reflects an air of cleanliness. Blue is another restful color and can be used to good advantage in the same manner as the forementioned colors.

Color can also be used successfully to "spotlight" protective equipment on machines, and indicate location of hazards which otherwise might escape notice. Yellow has the highest visibility of any color under practically all lighting conditions and is especially adaptable as a "safety color." When used with black, in alternate bars, yellow shows up sharply on overhead obstructions, and falling or tripping hazards. Curbings, edges of loading platforms, pits, chain hoist blocks, and floor elevation changes are particularly noticeable when yellow and black striping is applied.

For many years, the color red has been associated and identified with fire protection equipment in shops; and if possible, red paint should be reserved for this use. Too often fire extinguishers are mounted in inconspicuous spots in shops where they are hard to locate when the need arises. Therefore, paint authorities recommend red areas should be painted at the spot where fire protection equipment is hung. Alarm stations and hose closets should also be painted red for easy identification.

Piping in shops can be identified easily if various colors are used to denote their contents or use.

If color is put to intelligent use, it can be soothing and produce highly satisfying effects. It also assures orderly shop arrangement and good housekeeping. But the promiscuous use of color without planning, can be irritable and confusing. So plan your painting schemes with an eye toward better working conditions and paint will work for you.

SOUTH BEND



HOW TO RUN A LATHE

Send for this 128 page handbook on the care and operation of lathes. 365 illustrations. Sent postpaid for 25 cents, coin or stamps.



A versatile tool capable of many and varied jobs is this South Bend all-purpose lathe. Its versatility permits full play of the operator's resourcefulness and ingenuity in reconditioning worn parts and fashioning new parts from used materials. Its unfailing precision makes possible the duplication of repair parts to original factory tolerance limits. In every sense it is a most essential piece of equipment in service shops where minutes count and the most must be made of materials at hand. If ever a tool was capable of "paying its way" many times over, it is this South Bend 16-inch Precision Lathe. Write for Catalog No. 100-D, describing this and other types and sizes of South Bend Lathes.

Lathe Builders For 38 Years

SOUTH BEND LATHE WORKS
450 EAST MADISON STREET • SOUTH BEND 22, INDIANA

Our future is in his hands

That's right, youngster—reach for it! Whatever it may be, to you it's something new and brightly shining—and so worth looking into.

And that's the spirit this old world needs—today, tomorrow and always.

* * *

Reaching out for new things is an old American habit. It's a good thing we still have it.

For looking beyond the war clouds, we know we will want more and better things than we have ever had before.

We will want more jobs than we've ever known. We will want good wages for those ready to earn them. We will want living standards higher than any we have enjoyed in the past.

And General Motors men are convinced, by their own experience, that the way to attain them is to reach for them and work for them.

Not many years ago, for example, the science of food protection was in its infancy. General Motors men reached for new and better ways to improve domestic refrigeration—to bring it within the means of the average family, to make it conserve health and lighten work.

It took consistent effort and long-pull planning to produce the kind of household refrigeration we now know. But those trim, efficient machines in America's kitchens revolutionized housework, and brought down the cost of food protection.

And General Motors men—busy now at meeting the needs of war—see great progress yet to be made in peacetime in household refrigeration and in the field of home freezers, and the protection of frozen foods in quantity.

So we find that today, as always, many future benefits rest in the hands of those who reach for the bright and shining promise, as this youngster is.

And as long as each generation is free to go forward with confidence in its future, the march toward "more and better things for more people" will continue steadily and without halt.

That has always been General Motors' goal.

GENERAL MOTORS

"VICTORY IS OUR BUSINESS"

CHEVROLET • PONTIAC • OLDSMOBILE
BUICK • CADILLAC • BODY BY FISHER
FRIGIDAIRE • GMC TRUCK AND COACH
GM DIESEL

Every Sunday Afternoon
GENERAL MOTORS SYMPHONY OF THE AIR
NBC Network

Buy Bigger Bonds for the

Big 7th

War Loan Drive



Fast for Reverse

(Continued from page 25)

fingers through his white hair. "I guess we'll have to fix that—and fast."

"Golly," Tommy blurted, "I hope it's not anything serious."

"So do I! We've got to make time. You go in the office and tell the chauffeur I told you to make out a new bill. And take all the time you can doin' it. Stall for all you're worth."

Tommy did as he was told. He made the chauffeur repeat the name

and address, and chewed his pencil before he wrote each word. The chauffeur became more annoyed, but Tommy knew he would be still more annoyed if he knew what had happened to the Cadillac, so he stalled contentedly. After a few minutes, Pop returned smiling. He winked at Tommy.

"What's the matter with you? Haven't you finished that bill yet? Do you think customers have got all day to wait?"

"Here it is," Tommy remarked. The chauffeur paid.

"Sorry," said Pop.

"Aw, that's okay. You gotta put

up with some terrible help these days. There's a war on."

Pop watched him as he climbed into the Cadillac and drove off. "Judgin' from that chauffeur, I guess 'Stinky' Powers has to put up with some terrible help, too."

"What did I do to the Cadillac?" asked Tommy anxiously.

"Nothin'."

"Then what was—"

"There wasn't nothin' wrong a tall, except the idlin' speed was too low. But I don't mind tellin' you now I was scared. I was afraid the trouble might be in the front pump."

Tommy gazed blankly as Pop laughed.

"Goin' too fast for you again, eh? Well, let me sit down and I'll try to unravel the deep, dark mystery for you. He reached down an instruction book from a shelf and sat down at the desk.

"That Cadillac," he explained, opening the book, "has a Hydra-Matic drive. It's about as different from the ordinary transmission as left from right.

"Take a look at this diagram. It's got a fluid couplin' instead of a regular clutch. And instead of the usual helical gears it's got three planetary units. Now each of these units has three planet gears meshed between a sun gear and an internal gear. One of the planetary gears is integral with a drum that has an outside band that keeps it from rotatin' when the band's tightened. Besides, each of the first two units has got a multiple disc clutch.

"Now what happens is this: the fluid in the coupling transmits the power from the flywheel to the driven member of the fluid unit and turns an intermediate shaft. We can get the power back further in two ways. We can either tighten the band around the planet gears to engage them or we can by-pass the gears by engagin' the clutch. In either case, the power will be transmitted to the mainshaft. Now we can do the same with the rear planetary unit. We can either engage the gears or the clutch. The power will reach the output shaft either way. The third planetary unit is the reverse. This unit ain't got a clutch. If the gears is engaged, it reverses the rotation of the output shaft.

"When you shift gears, this happens: Goin' into first, both the bands is applied, and the gears is engaged in both units. That gives the greatest gear reduction. Now, when you shift to second, the gears in the first unit is slipped outa mesh and the clutch is applied, so only the gears in the second unit is workin'. Goin' into third, the gears in the first unit engage but the ones in the second unit slip out and the clutch engages. In fourth, none of the gears is engaged

(Continued on page 58)



MARVEL MYSTERY OIL goes to work many ways to help you keep today's overworked motor vehicles ready and able to hit the road. First, it halts excessive engine wear and protects valve stems and guides with reinforced lubrication. In high heat engine combustion areas, where ordinary lubricants break down, MARVEL MYSTERY OIL stands up and sustains its remarkable lubricating efficiency. Second, when added to lubricating oil, it allows rings and sticky valves to function smoothly . . . oil lines and pump screens benefit by its great gum solvent ability. Added to the fuel tank, it improves the performance of today's low octane gas and prevents accumulation of power killing fuel residues and gums.

No wonder MARVEL MYSTERY OIL is in active demand among ALL your customers right now . . . for millions of motorists it is one good answer to maximum motor efficiency and continued operation this summer. Are you ready to meet this huge demand? Ask us for the quick answer . . . you can easily have MARVEL MYSTERY OIL ready for steady plus profit sales now. The Emerol Mfg. Co., Inc., 242 W. 69th St., New York 23, N. Y.



MARVEL MYSTERY OIL



MOTOR SPECIALTIES

Empire Electric Brake Company
Newark 7, New Jersey
Gentlemen:

We have
acknowledging ov
of order of
T. Vacdr



Says J. F. Johnston . . . "excellent service— heavily laden trucks—severe mountains"

"The Vacdraulic units we have placed in service are installed on trucks carrying coal from an open cut mine, high in the Southern Alps of South Island, to the sea — locally known as the 'Burma Road.'"

"The fact these Vacdraulics are giving excellent service in this severe mountainous country on heavily laden trucks is very pleasing."

Vacdraulic is a rugged, self-contained unit, attached at a convenient point in the hydraulic brake line. It utilizes the vacuum produced by the motor to multiply the power and stopping energy exerted on the brake drums. It gives any good hydraulic brake that important factor of safe, split-second stopability.

With feather-touch, instant, eye-to-pedal-to-brake action, Vacdraulic gives you that extra margin of safety essential to driving in congested traffic or over high speed highways.

VACDRAULIC



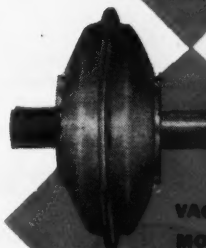
KELSEY - HAYES WHEEL CO., DETROIT, MICH.

Sold to Automotive Distributors by
EMPIRE ELECTRIC BRAKE CO., Newark 7, N. J.

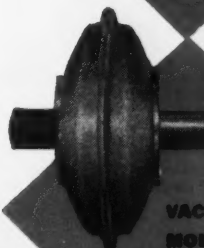
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**VACDRAULIC
MODEL 50**
Passenger Cars
and Light Trucks



**VACDRAULIC
MODEL 100**
Medium
Trucks



**VACDRAULIC
MODEL 240**
Medium Heavy
Trucks

Fast for Reverse

(Continued from page 56)

but only the clutches. That way you get direct drive straight through the transmission."

Sitting down on a corner of the desk, Tommy scratched the lobe of an ear. "But I thought the transmission worked automatic. The name kind of sounds like it does."

"It is automatic," Pop pointed out. "Remember I mentioned a front pump a minute ago? Well, here it is in the diagram, right up in front of the transmission. It's driven by the inter-

mediate shaft. And back here is the rear pump—driven by the output shaft. The pressure built up by one or the other of these pumps does all the gear shiftin', with some help from a governor, a valve body and two servo units.

"The pumps force the fluid into the valve body, and from there it goes either to the servos or to the clutches. One of the servos applies and releases the front band, the other the rear band.

"When you start the engine, the front pump begins to build up pressure in the system. Then, as soon as the car starts to move, the rear pump

takes over. Any change in speed results in a change in pressure and operates the gears."

Pop slapped the instruction book shut and leaned back in his swivel chair.

"That's why I got scared when you told me the gears was stuck in reverse. I thought we'd have to check the pressure in the front pump to see whether it was up to 80 pounds, and then maybe replace the gears.

"As things turned out, there wasn't nothin' wrong but a slow idle. I soon took care of that. And you want to keep this in mind," he said, rising, "these transmissions is, sometimes awful hard to get out of reverse when the engine is cold. Don't be afraid of leanin' on the selector lever."

Sliding from the desk, Tommy grinned. "I was afraid I'd bust something sure."

Pop looked at his watch. "Quarter after twelve," he exclaimed. "I'll have to step on it to get back by one."

"Why you don't usually—"

"I know. But things is different now. I gotta keep up with the men. Ever since the fightin' stopped over in Europe, they've been gettin' back from lunch right on the dot. They ain't takin' no chances on increasin' unemployment."

Better Protection for your welders

.... helps to improve work output and quality — for you



AIRCO COVERSPEC GOGGLES. Designed to protect eyeglasses against pitting caused by hot oxide particles. Fit readily over operator's eyeglasses and rigid bridge prevents catching on the eyeglasses when goggles are removed. Fitted with standard Noviweld or Didymium-Noviweld lenses of 50 mm. diameter. Prices: \$2.15, with Noviweld lenses in all shades; \$2.75, with Didymium lenses in all shades.

AIRCO SUPER-QUALITY LEATHER GLOVES, for gas welding and cutting, offer superior wearing quality. Constructed of cowhide chrome tanned leather with seamless palm, seams on back of fingers, and welt reinforcements at base of second and third fingers. Also, there are reinforcement patches on thumbs and under fingers, and on back of left hand. Size 11 only. Price: 1 to 11 prs.: \$2.20; 12 to 49 prs.: \$1.95.

IT'S WISE to give your welding and cutting operators best possible protection against eye and hand injury. Outfit them with high-quality Airco goggles and gloves and their work will reflect their increased confidence ... their appreciation that you are vitally concerned with their health and safety.

All Airco goggles are fitted with the best filtering lenses available, yet cost no more than ordinary goggles. Airco gloves are designed to give maximum protection while permitting full freedom of finger movement.

Your nearby Airco storeroom carries a

stock of these economical, safety-comfort goggles and gloves — together with a complete line of Airco products.

Save Buying Time

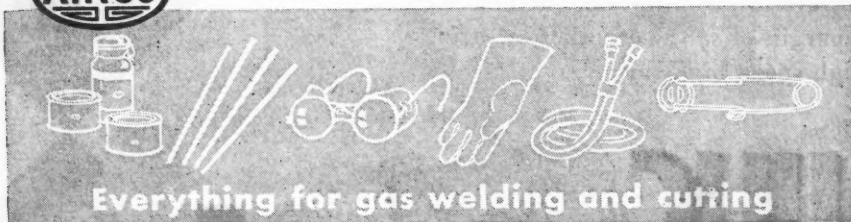
Send for your FREE copy of the "Welding Supplies Price List". It gives complete details on Airco's comprehensive line of gas welding supplies. Address your nearest Airco office or write Dept. MG at the New York office.



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Everything for gas welding and cutting

Grey-Rock Officials Hold Session

Meeting at Hershey, Pa., U. S. Asbestos field and plant officials recently held a four-day session on Post-War plant for Grey-Rock friction and rubber lines. District Managers Sydney H. Russell (West Coast), James A. Wheatley, Jr. (Mid-West), S. T. Gardiner (South), Fred D. Raymond (East), and Frank McLoud (New England) represented the Grey-Rock field force while Franklin A. Miller, replacement sales manager, headed up the group of plant officials.

The meeting ended with a trip through the plants and laboratories at Manheim and Passaic where the district managers saw many of the new improvements in products for war which eventually find their way to the automotive replacement market.

SOAX

AUTOMOTIVE and AVIATION
CHEMICALS

E. A. GERLACH CO.
PHILA. 40, PA., U. S. A.

Bear Down All You Want These Drills Won't Stall



Black & Decker Drills Give You More of "What It Takes" to Get Jobs Done

You get more for your money when you buy any Black & Decker Electric Drill . . . more performance built into the tool . . . more service behind the tool. That's why tool users of every kind, from one-man shops to the largest industrial plants, have made Black & Decker Drills the most widely used electric tools in the world.

More performance built into the tool . . . here's just one example: You can't stall a Black & Decker Drill on any job up to rated capacity. That's because we use no stock motors. Each motor is engineered and built completely, right in our own plant, to deliver maximum efficiency and performance in the particular model it drives.

More service behind the tool: Black & Decker has 25 factory-owned service branches* from coast to coast—where factory-trained men use factory equipment and genuine factory parts to give you fast service on repairs and overhauls if and when you need them.

The complete Black & Decker line includes Drills of many models and capacities from 1/4" to 1 1/4", as well as Valve Refacers, Valve Seat Grinders, Sanders and many other Portable Electric Tools. For 1945 catalog address: The Black & Decker Mfg. Co., 627 Pennsylvania Ave., Towson 4, Md. For help on any tooling problem, call your nearby Black & Decker Distributor.



LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

1/2" STANDARD DRILL \$53.00

Capacity up to 1/2" diameter in Steel, 1" in Hardwood.

1/4" STANDARD "HOLGUN" \$32.50

Capacity up to 1/4" diameter in Steel, 1/2" in Hardwood.

*FACTORY SERVICE BRANCHES in Atlanta, Ga.; Baltimore, Md.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cleveland, Ohio; Dallas, Texas; Denver, Colo.; Detroit, Mich.; Indianapolis, Ind.; Kansas City, Mo.; Los Angeles, Calif.; Memphis, Tenn.; Minneapolis, Minn.; Newark, N. J.; New Orleans, La.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; San Francisco, Calif.; Seattle, Wash.; St. Louis, Mo.; Towson, Md.; Toronto, Ont.; Montreal, Que.

in **WAR**

WING TIP
POSITION
LIGHT



INTER-
AIRCRAFT
CONTROL
LIGHT



RETRACTABLE
LANDING
LIGHT



FORMATION
POSITION
LIGHT

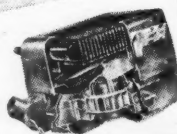


RECOGNITION LIGHT



in *Peace*

AUTOMOBILE HEATERS



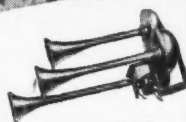
BICYCLE LAMPS
AND HORNS



WINDSHIELD WIPERS



AUTOMOBILE
HORNS



THIS MODERN factory representing thirty-five years experience in making products for safety and comfort had to be transformed in almost as many days to weapons for war and destruction.

The speed with which the emergency forced us to convert was a great source of satisfaction. It taught us what can be done when one has the will.

It set a standard to which we shall operate when the signal is given for reconversion to E.A. peace-time products.

E.A. dealers and distributors to whom we owe so much may expect no less than we have offered to the armed forces—*our best*. That E.A. profits will return very, very soon after V-Day is our pledge to you.

E. A. LABORATORIES, Inc., BROOKLYN, N. Y.

MAKERS OF AUTOMOTIVE, AVIATION, BICYCLE and MARINE APPLIANCES

Carburetor Tune-up

(Continued from page 26)

stalls for one car. It will also speed up repair jobs, so important to shop and customer alike.

Another business building program is to cooperate with small dealers in nearby towns or shops in neighborhood districts. Never turn down a small shop operator for parts that he needs to repair his customers' cars, or perform some major job for him that he can't handle in his own shop, for it is a paying policy, Mr. Emrah maintains, bearing out his 28 years' experience as a Chevrolet service man.

To illustrate, a repair shop operator brings in a transmission which his facilities do not permit him to repair. The Swanson policy is to supply the parts at regular prices and charge only for the labor. The repair man charges his customer for parts and labor done in this shop, plus his time for taking down and re-installing in customer's car. This method builds friends and results in many car sales in normal times that would otherwise go elsewhere. Your best boosters are your friends whom you helped when they needed it most, Mr. Emrah declared.

Service customers are followed up every 30, 60 and 90 days. They either call him by telephone, by personal contact, or write him when it is time for additional lubrication jobs, check-ups or motor tune-ups, plus the use of newspaper advertising describing seasonable service needs.



"And then this morning my mind musta snapped . . . I fired an employee!"

Will it come to this?

YES!
AND THERE WILL BE U.S.
EQUIPMENT TO MATCH IT

There are many blue-printing designs on service stations that are now marking time, awaiting the declaration of peace. Yes, and our plans on service station equipment will blend in and harmonize with these modern designed service stations, in appearance, and in streamlined performance. U. S. has always been a step ahead in the parade of modern service station equipment and has pioneered many advancements. Keep an eye on U. S. when the whistles blow, announcing peace, there'll be something new added to the ever popular U. S. line.

BUY A WAR BOND AND KEEP IT

U.S. AIR COMPRESSOR CO.
5300 Harvard Ave. • Cleveland, Ohio
AIR COMPRESSORS HYDRAULIC LIFTS
LUBRICATING EQUIPMENT

REWOUND ARMATURES
FOR ALL POPULAR MAKE CARS
IMMEDIATE DELIVERY
ALSO RECONDITIONED USED
ARMATURES AND PARTS

We stock only genuine used parts. All are thoroughly tested and cleaned with the most modern methods and equipment. Each part carries our money-back guarantee.

Write for price list B
HASCO PRODUCTS, INC.
131 Park Ave., Lyndhurst, New Jersey

LINCOLN LUBRICATING EQUIPMENT
plays an important part in
WAR PROGRAM

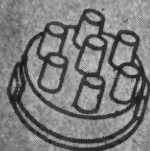
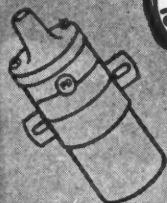
by providing fast, thorough, and economical lubrication of cars, trucks, buses and other motor vehicles so important in the transportation of war materials and men engaged in war production. Ask your nearest jobber, or write us for details on this equipment.

LINCOLN ENGINEERING COMPANY
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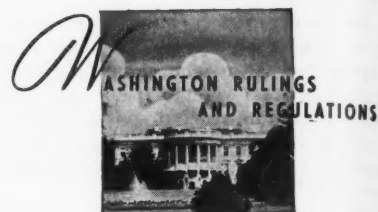
By handling the one complete line of P & D high quality starting, lighting, ignition, replacement parts, and coils for trucks, buses and automobiles, you know you are doing your share in keeping America's vehicles rolling longer and safer.

And with good reason! For high quality P & D products always assure repair shop and service station operators of satisfactory jobs for their customers.

You cannot purchase any finer quality.

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MANUFACTURING COMPANY, INC.
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STARTING • LIGHTING • IGNITION • REPLACEMENT PARTS
P & D MANUFACTURES ONLY ONE COMPLETE QUALITY LINE. ONLY THE FINEST MATERIALS AND WORKMANSHIP OBTAINABLE ARE EMPLOYED



Restrictions Removed On Replacement Parts

ALL restrictions on production and distribution of automotive replacement parts have been removed through a revision of Limitation Order L-158, the War Production Board has announced.

The action taken, WPB said, is in accord with recommendations for post-V-E Day made by the Replacement Parts Industry Advisory Committee at its last meeting here August 24, 1944.

Previously, production of replacement parts was limited to items listed on Schedules I and II of the order. WPB said that it was generally agreed, however, that production of certain automotive replacement parts should be protected by firm allotments of controlled materials and by the preference ratings assigned to essential civilian production.

A preference rating of AA-1 is assigned under the revised order to producers of replacement parts and to the manufacturers of the components of such parts listed on Schedules I and II, except parts and components for light trucks and passenger automobiles, for which a preference rating of AA-2X is assigned.

The emergency repair certificate is retained in the present order to allow manufacturers to differentiate between breakdown and stock orders.

Price Tag Must Be Visibly Displayed

DEALERS hereafter are required to attach the label or tag bearing the description of a used car and the ceiling price in a place on the car where it can be readily seen by the purchaser—such as attached to the rear-view mirror or to the steering wheel. In the past some sellers have been placing the required label or tag in a position on the car where it would ordinarily escape the notice of the purchaser.

(Continued on page 64)



THE CURRAN CORPORATION
Manufacturing Chemists, Malden, Mass.

COMPANION PRODUCTS
for Replacement Service

GLOBE Spinning Power
BATTERIES

Full Spark
PLUGS



GLOBE-UNION INC., Milwaukee 1, Wis

The LEADER must LEAD

Raybestos Leads in Practical Service Helps



Leadership necessitates "follow thru". Raybestos follows through by providing practical service helps which make it possible for you to handle more brake service, speed up the work, do a better job. Send coupon.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.

FREE!

THE RAYBESTOS DIVISION
of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.

- ☐ Raybestos Brake Service Chart.
☐ Raybestos Brake Service Guide.

Name _____

Address _____

My Automotive Supplier is _____



Buy an EXTRA Bond

Brake Linings, Clutch Facings, Fan Belts, Hose — For Cars, Trucks, Buses, Tractors — On the War and Civilian Fronts

VITALIC

*fan belts
and
radiator
hose*



The EXTRA FACTOR

in every Vitalic product is the extra experience of the man who makes it. That Continental has done a good job producing war materials is evidenced by the Army-Navy "E" Flag, with three Stars, for sustained excellence in production. ★ Production of Vitalic fan belts and radiator hose is limited only by war activities, and Vitalic jobbers are receiving their full share of war-time production.

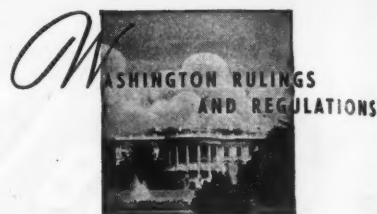


C

Baltimore, Md.	Cleveland, Ohio	Greensboro, N. C.	Lutz, Fla.	Pittsburgh, Pa.
Boston, Mass.	Dallas, Texas	Hartford, Conn.	Memphis, Tenn.	Rochester, N. Y.
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ONTINENTAL RUBBER WORKS

ERIE, PENNSYLVANIA, U. S. A.



(Continued from page 62)

Warranted Maximum Price On Commercial Trucks

DEALERS may now charge warranted maximum prices for used motor trucks and other commercial vehicles only in sales to users on a warranted basis, the Office of Price Administration announced.

As of May 16, 1945, no dealer may sell used trucks or other commercial vehicles to a dealer or other general seller at prices higher than "as is" ceilings. Prohibiting truck and commercial vehicle sales from one dealer to another at warranted maximum prices brings commercial vehicle pricing practice into line with that already provided for used passenger car sales, OPA said. It establishes a spread between the prices dealers may charge each other and the prices they may charge consumers, thus providing a margin of resale profit for placing the car in warranted condition.

A warranted truck or commercial vehicle is a vehicle that is in good operating condition and carries a written guarantee that the seller will make stated repairs at 50 per cent of his normal charges during the 30 days following sale or the first 1,000 miles of operation, whichever comes first. The warranted price is always higher than an "as is" price.

WPB Revokes Handling Stored Vehicle Orders

REVOCATION of Conservation Orders M-216a and M-216b, covering the handling of motor vehicles stored and delivered under rationing, was announced by the War Production Board. M-216 was previously revoked.

M-216a, issued March 3, 1943, made it mandatory upon a producer, distributor or dealer to follow certain procedures before delivering a rationed motor vehicle to a customer. Procedures included removing oil, checking tires, etc.

M-216b, issued March 6, 1943, prohibited the removal of equipment or parts from vehicles held for rationing. In addition, the conversion of medium trucks for bus use was forbidden.



SOME SPARK PLUGS GET SPRING FEVER

Today's low-octane fuels make some spark plugs act like they had spring fever—lazy, listless and inclined to lie down under a hard pull. That's because these plugs are the wrong Heat Range for the fuels now available—or maybe it's just because they have been neglected.

You can be of genuine help to your customers if you will sell them AC Spark Plugs of the right Heat Range for today's fuels, and educate them to have those plugs cleaned and regapped every 3000 miles. Then they'll have the utmost in spark plug reliability, under all operating conditions—and you'll sell 2 new spark plugs for every 6 you clean.

There's a big replacement market, ready-made, for every AC dealer, because AC's are standard equipment on 2 of every 4 cars and trucks built from 1932 until civilian production ended. Spring is the best time to cash in on it, as part of every service job.

AC's wider Heat Range assures longer life and better engine performance

BUY MORE THAN EVER IN THE 7th WAR BOND DRIVE

SPARK PLUGS

SEND FOR AC SHOP MANUALS

Field Service Dept., AC Spark Plug Division, G. M. Corp. MA-6
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

- | | |
|--|--|
| <input type="checkbox"/> How to Service Spark Plug Cleaner | <input type="checkbox"/> How to Service Fuel Pumps |
| <input type="checkbox"/> How to Service Air Cleaners | <input type="checkbox"/> How to Service Speedometers |
| <input type="checkbox"/> HOW TO SERVICE SPARK PLUGS | <input type="checkbox"/> How to Service Oil Filters |
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JUNE, 1945

When writing to advertisers please mention Motor Age

Shop Kinks

Cleaning Valve Guides

On a valve grind when cleaning valve guides, I use a piece of one-fourth inch round rod about six inches long and saw a slot in one end about two inches long and file the sharp edges smooth, insert a piece of 2 in. emery paper and wrap around the rod until it fits the inside of the valve guide snugly and drive the rod with a small electric drill. This will quickly



clean valve guides any size.—Leonard Grissom, Talbot Motor Service, 320 N. Talbot St., Indianapolis 4, Ind.

Prevents Guide Damage

When installing new valve guides in Chevrolet heads, a simple tool may be made for the purpose very quickly.

A Chevrolet wrist pin has a shoulder on the inside. Grind off the end of the pin so that it measures 61/64 in. from the shoulder to the

ground off end. Slip the wrist pin over the valve guide and drive it in until the pin hits the cylinder head and the job is done and no damage is done to the end of the guide.—Carl Junens, c/o University Chevrolet, 4501 Roosevelt Way, Seattle 3, Wash.

Holding Valve Lifters

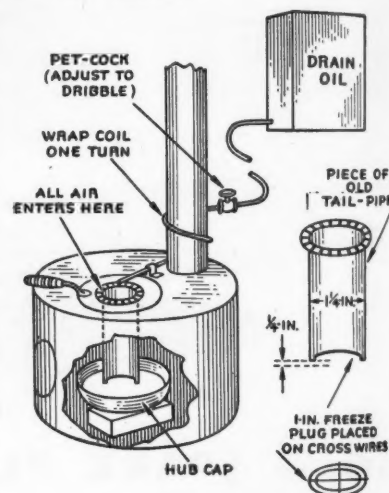
When removing a camshaft from an engine, a simple way to hold the valve lifters up and keep them from dropping down between the cams is to take a few hack saw blades and



weave them back and forth between the lifters. The spring pressure of the hack saw blades will hold the lifters up.—William Delach, 1074 Saw Mill Way, Pittsburgh 12, Pa.

Heat from Drainings

A large number of repair shops have difficulty in heating the building in cold weather.

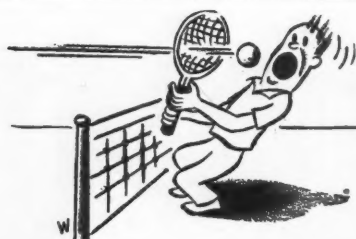


We have made a heater which utilizes old crankcase drainings as fuel. The stove is an ordinary sheet-metal stove and the rest of the outfit is made from old junk found around the shop. Hal Strecker, 10515 Bloomfield, North Hollywood, Cal.

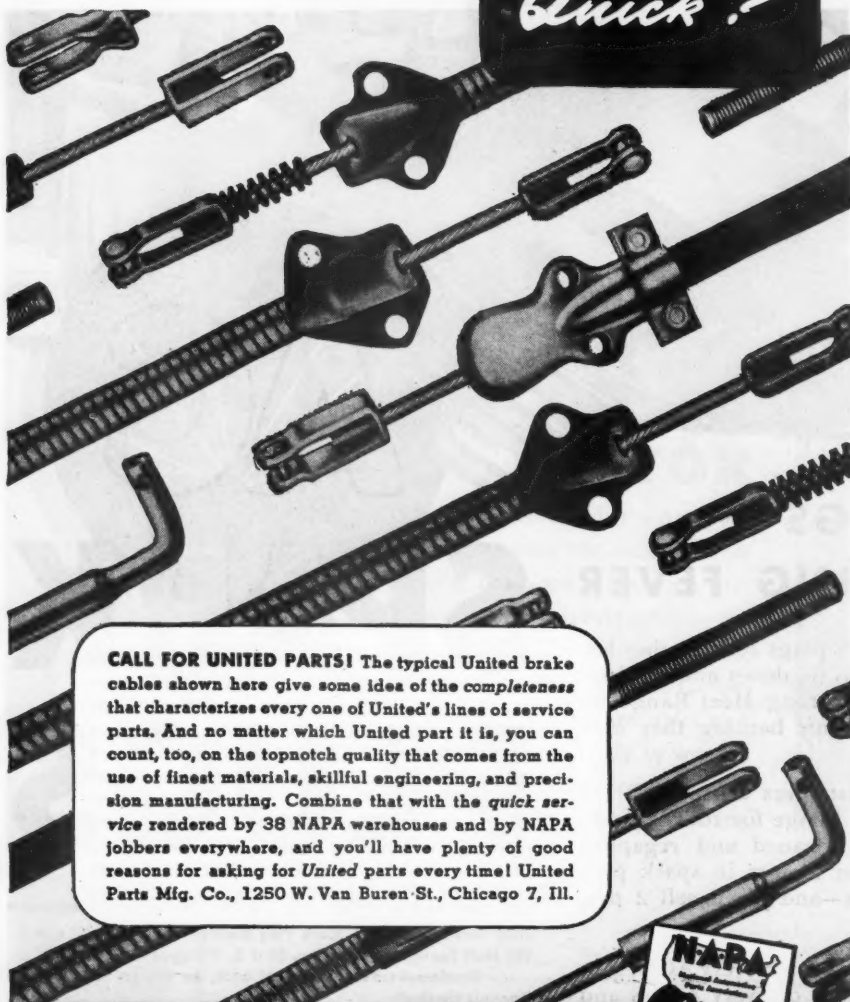
Slight Increase in Lead for Batteries

Slight increase in the amount of lead available for production of storage batteries for civilian use during the remainder of the second quarter of 1945 was announced by the War Production Board today.

Order M-38 has been amended, effective May 1, 1945, to allow producers of electric storage batteries for civilian consumption to use, during May and June, up to 80 per cent of lead consumed for the same purpose in the corresponding period of 1944, WPB said.



**NEED
HELP
Quick?**



CALL FOR UNITED PARTS! The typical United brake cables shown here give some idea of the completeness that characterizes every one of United's lines of service parts. And no matter which United part it is, you can count, too, on the topnotch quality that comes from the use of finest materials, skillful engineering, and precision manufacturing. Combine that with the quick service rendered by 38 NAPA warehouses and by NAPA jobbers everywhere, and you'll have plenty of good reasons for asking for United parts every time! United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7, Ill.

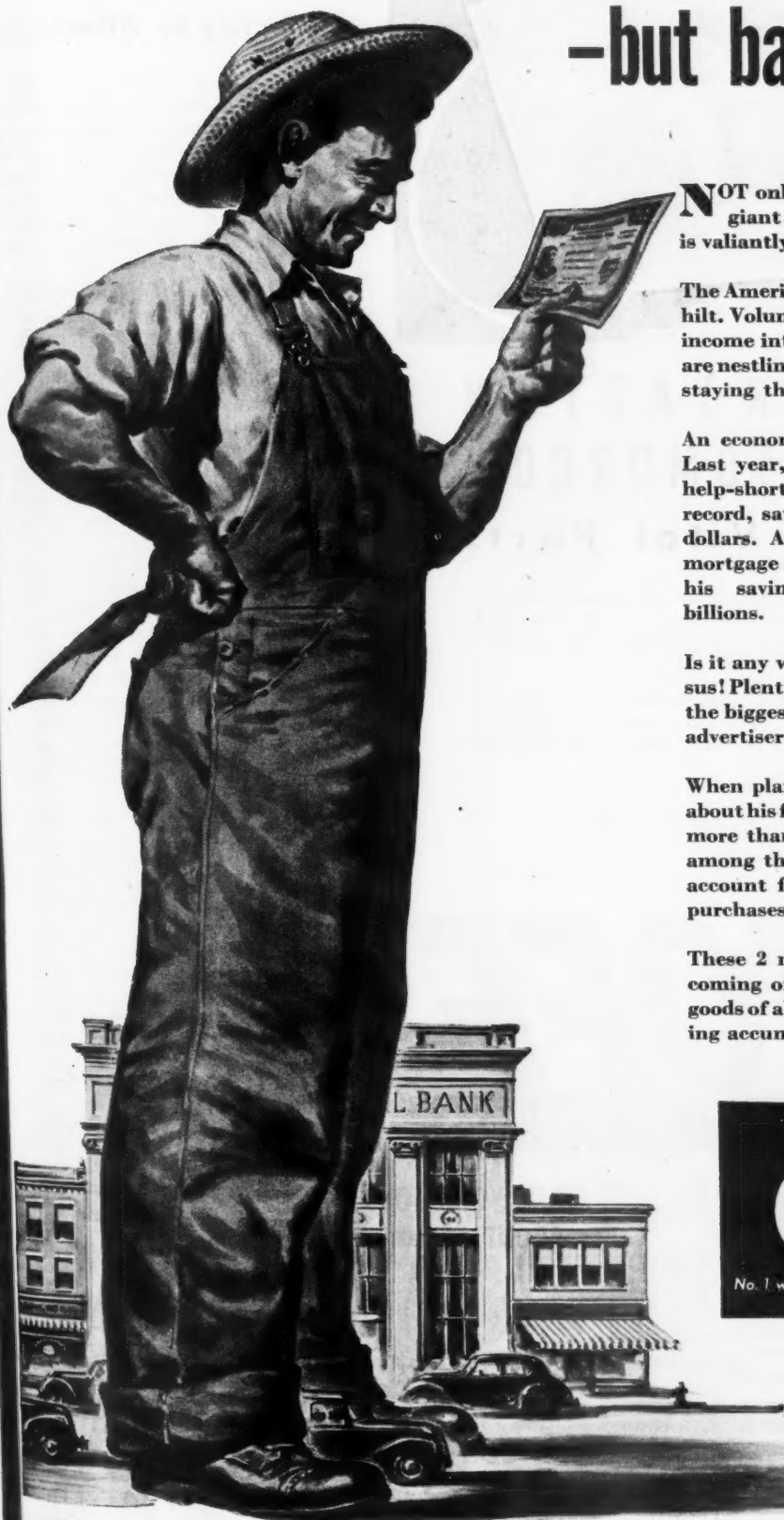
UNITED PARTS

HYDRAULIC BRAKE PARTS • BRAKE CABLES
SPEEDOMETER CABLES & CASINGS • FUEL & VACUUM PUMP PARTS



He could "buy the bank"

-but banks on Bonds!



NOT only with his strong hands, but with his giant income, Colossus of the Cross Roads is valiantly supporting the war effort.

The American Farmer is buying War Bonds to the hilt. Voluntarily, he's put well over 10% of his net income into Bonds. Some 4 billion dollars' worth are nestling in his safe deposit box right now—and staying there.

An economic giant of first rank, this Colossus. Last year, despite aging machinery and drastic help-shortage, he hung up another production record, saw his income soar to nearly 28 billion dollars. And, while reducing or paying off his mortgage and clearing up his debts, he's added to his savings until they're now around 14 billions.

Is it any wonder we say: Keep your eye on Colossus! Plenty of shrewd business men regard him as the biggest prospect in sight, a source of sales no advertiser can ignore.

When planning *your* advertising, remember this about his favorite magazine: Country Gentleman's more than 2 million circulation is concentrated among the nation's top-half farm families, who account for more than 72% of all farm-family purchases.

These 2 million super-prospects await only the coming of peace, and the production of civilian goods of all kinds, to start satisfying their staggering accumulation of pent-up needs.

Country Gentleman

No. 1 with FARMERS—RURAL DEALERS—ADVERTISERS

What business can ignore the farmer's strength?

JUNE, 1945

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67



TRANSPORTATION TODAY AND TOMORROW Needs These Vital Parts

Today, NIEHOFF PRODUCTS are sharing in the tremendous task of maintaining America's automotive transportation. In every field of operation—essential passenger cars, trucks, buses and taxicabs—NIEHOFF PRODUCTS are serving with distinction.

Correctly designed and scientifically engineered to give dependable, unfailing service on all electrical systems, NIEHOFF PRODUCTS are available through a national network of NIEHOFF Jobbers.

C. E. NIEHOFF & CO.

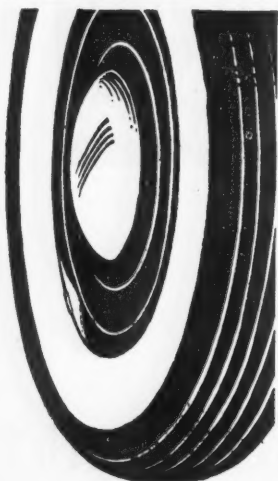
4925 Lawrence Avenue • Chicago 30, Illinois

Pacific Coast Branch: 1342 S. Flower St., Los Angeles 15, Calif.

New York Warehouse and Sales: 250 W. 54th St., New York 19, N. Y.

NIEHOFF

APPROVED QUALITY PRODUCTS



SNUGL

FAD-A-WAY
AUTOMOTIVE

WHEEL BALANCE WEIGHTS

TRUCKS • BUSES • PASS. CARS



PAT. NO. D-119-321
D-5189

FACTORY
MID-WESTERN AUTO PARTS
KOKOMO INDIANA

WEST COAST DISTRIBUTOR
910 WEST PICO BLVD.
LOS ANGELES 15, CALIF.

ASK YOUR JOBBER
ABOUT

EVERFLEX

NEOPRENE

Flexible FUEL LINE ASSORTMENT
No. 5.... Contains 75 Fast-Selling Fuel Lines

EVERHOT PRODUCTS CO.

2055-59 W. CARROLL AVE., CHICAGO 12, ILLINOIS

Legally Speaking

A lawyer's interpretation of federal and local court decisions of interest to repairmen, presented each month.

Collecting by Attachment

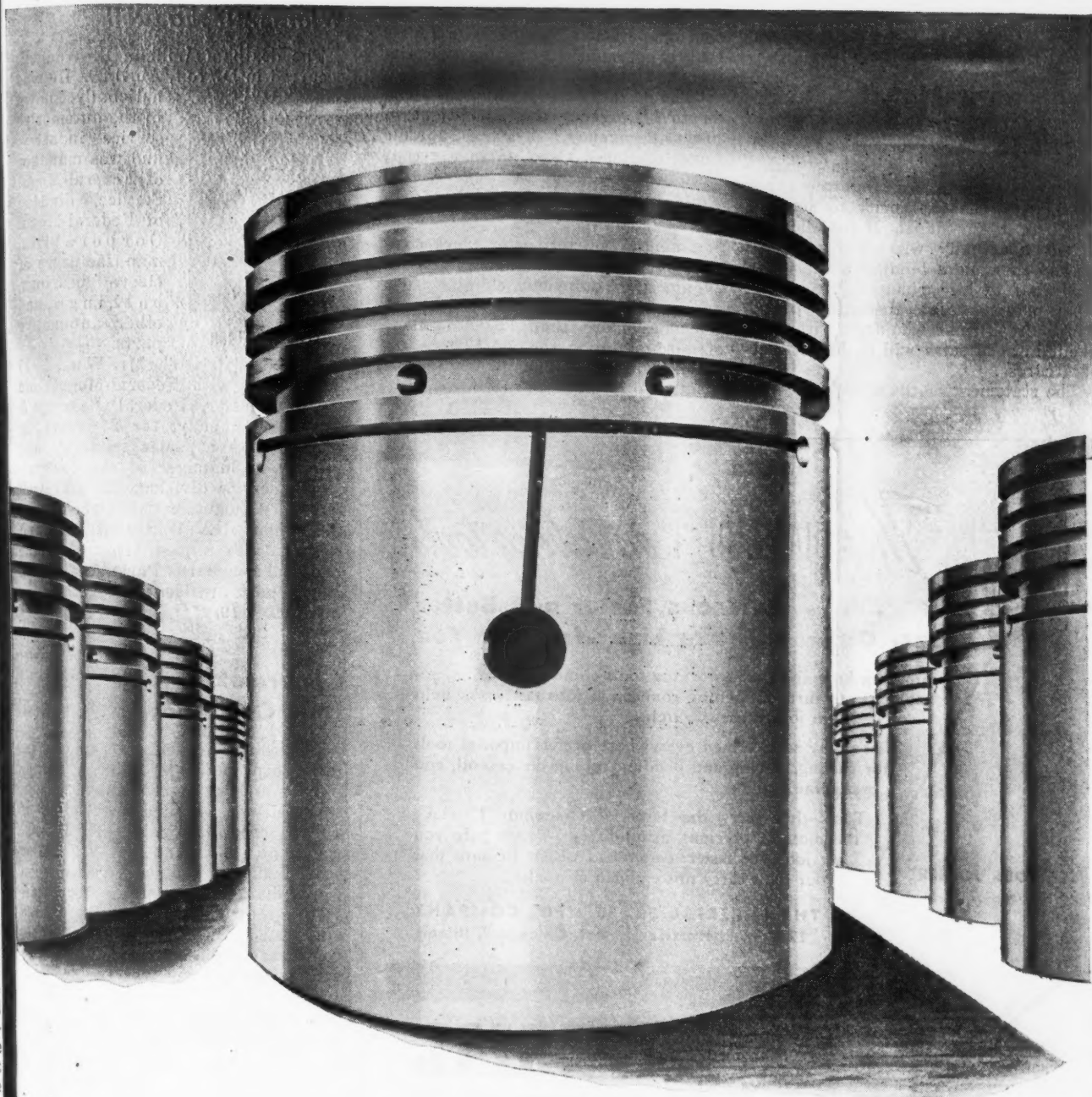
Businessmen trying to collect a delinquent account sometimes are able to locate the debtor's bank account or someone who owes money to the debtor. Can the businessman in such circumstances proceed directly against the bank or against his debtor's debtor in order to collect the money owing to him?

Each state has its own law on this subject. In Kentucky recently, a creditor attempted to collect his bill by proceeding directly against a person who owed money to the debtor. In such a situation, the debtor's debtor is known in law as the garnishee. The idea is that, if A has an account against B, and C in turn owes money to B, A may collect his claim against B out of the money which C owes B. C is the garnishee.

The Kentucky court, however, ruled that the creditor could not proceed directly against the garnishee, and this would probably be the law in most states. Ordinarily, a creditor must first get a judgment against his debtor and, having obtained that judgment, he may proceed against any garnishee who owes money to the debtor against whom he has obtained judgment.

Sometimes a creditor will locate a bank account belonging to his debtor and be helpless to attach the bank account because he has not first obtained judgment against his debtor. The bank account, of course, may be gone by the time he goes through legal proceedings to get the necessary judgment against the debtor. The safe practice in any event would be to get a judgment against the debtor at the earliest possible date. (*Ray vs. Fox Sons Co.*, 114 South Western Reporter, second series, 750).

(Continued on page 70)



Good Soldiers! **ALCOA LO-EX* PISTONS**

They're on every front—contributing to the better performance and greater dependability of every type of fighting equipment. On the home front, too, they

continue to carry on bravely with a minimum of attention. A salute to these good soldiers — LO-EX PISTONS, a product of Alcoa Aluminum.

*Registered trademark.

ALCOA ALUMINUM



Legally Speaking

(Continued from page 68)

Dealing with Agent

Repairmen dealing with agents or representatives of corporations and others are warned by recent court decisions to make sure that the supposed agent has authority to act on behalf of his principal. If the alleged agent is actually without legal authority to make a binding agreement on behalf of his principal, the principal may repudiate the entire deal, and the repairman who dealt with the agent in good faith will be left without redress.

The statement of the agent that he

has authority to act for the corporation or person he purports to represent, is not sufficient to protect repairmen and others dealing with him.

"The declarations of an agent alone as to his agency are insufficient to prove the agency," says the Supreme Court of South Carolina in a recent case." (*Broadway vs. Jeffers*, 194 *South Eastern Reporter*, 642).

A single Quartermaster truck company moves as much as 3,000 tons of engineering equipment, clothing, food and gasoline supplies each week, and consumes more than 25,000 gallons of gasoline doing the job. There are hundreds of such companies in the theatres of war.

William R. Waddell

The death of William R. Waddell, occurred in Detroit, April 29. He was nationally known in the automotive service industry, and was manager of Federal-Mogul Service, division of Federal-Mogul Corporation, manufacturers of sleeve bearings, bushings, and other automotive parts.



W. R. Waddell

Mr. Waddell had served with Federal-Mogul and its predecessor, Federal Bearing & Bushing Company, for 27 years, in recent years as sales manager and latterly as manager of the Federal-Mogul service division. He was well known to automotive wholesalers throughout the United States and Canada, was a past director of the National Standards Parts Association and a past president of Automotive Boosters B-19.

Chevrolet Reveals New Car Plans

Chevrolet Division of General Motors Corp. plans to build a lighter weight and more economical car in the post-war period after the fall of Japan, according to C. E. Wilson, president. Neither Mr. Wilson or other officials of the Corporation would divulge any details of the car, stating that it still is in the idea stage and that it will be a considerable period after the end of the Japanese war before the car will go into production.

The announcement indicates a shift in plans of the Corporation. Since Mr. Wilson last Fall stated, under questioning by the Press, that General Motors at that time had no plans for such a car. He did say, however, that the Corporation would build any kind of car that the public demanded. The decision to build a light car therefore is considered to indicate a potential public demand, and also to be an answer to the competitive challenge offered by the Ford Motor Co. which has announced that it will be in the field with an economy car to be priced about 25 per cent under the regular Ford line.

Leonard Spark Plug Makes New Appointment

The Leonard Spark Plug Co., Inc., Newark, N. J., announces the appointment of W. J. Schonhart as its New York State representative, and F. P. Hollister as representative in Kansas, Iowa, Missouri and Nebraska.

This DIAMOND "I" on tubing tools
... Means Faster and Better
Gas, Oil, and Brake Line Work for You

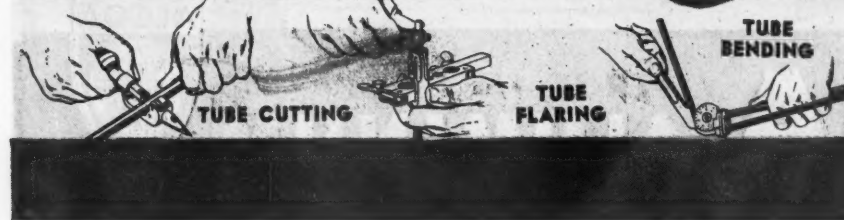
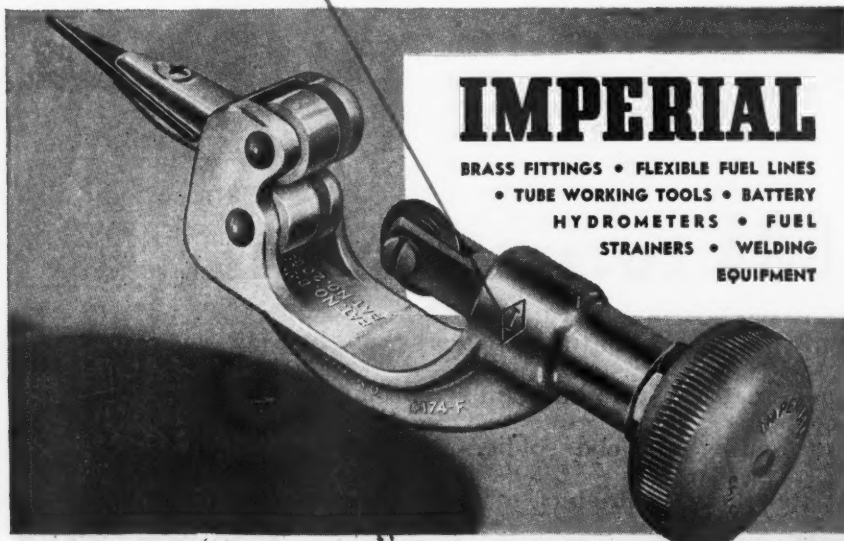
Amazing how good tube working tools eliminate grief... enable you to turn out tubing connection jobs faster... help you get tight joints that stay tight.

That's why service men everywhere prefer Imperial tools for cutting, flaring and bending tubing on gas, oil, and brake line work.

Tools that carry the Imperial Diamond "I" make the most of precious man-hours... they help you get jobs out faster, better and easier. Be sure that your tools carry this emblem of quality.

SEE YOUR JOBBER

THE IMPERIAL BRASS MFG. COMPANY
1217 West Harrison Street, Chicago 7, Illinois



When it's an EXIDE
... you start



Nationally
Advertised to
80 MILLIONS

Good merchandise
and good dealers go
hand in hand It
pays to buy products
and services from the
man who offers KNOWN
brands of high quality.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

BUY TO LAST

EXIDE advertising tells present car owners and future buyers that "Good merchandise and good dealers go hand in hand."

These impressive Exide advertisements will be seen by the 80 million readers of The Saturday Evening Post, Life, Collier's, Time, Country Gentleman, Farm Journal and Farmer's Wife, Progressive Farmer, American Fruit Grower, Breeder's Gazette, Hoard's Dairyman, Poultry Tribune, Southern Agriculturist, Popular Mechanics, and Popular Science Monthly. And among those readers are practically all your present and prospective customers.

More than ever before "It's good to be an Exide Dealer." And the Exide wholesaler is a good man for you to know. Plan your future with him.

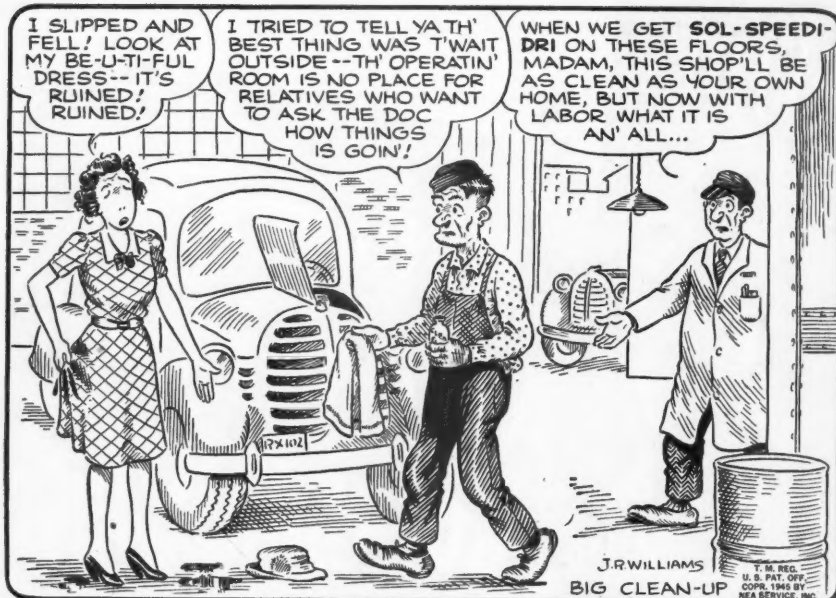
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

JUNE, 1945

When writing to advertisers please mention Motor Age

71

OUT OUR WAY



SOL-SPEEDI-DRI keeps floors clean and safe... with ease. It's a white, granular material that soaks up oil or grease like a blotter takes up ink. Just spread a thin carpet of SOL-SPEEDI-DRI in pits, under lifts, on shop-floors, driveways... wherever oil or grease-deposits accumulate... and it immediately provides a white, safe, non-skid surface. When oil-deposits have been absorbed, sweep up SOL-SPEEDI-DRI with a stiff broom, and the floor or driveway will be dry, clean, and

safe. SOL-SPEEDI-DRI will not readily burn, even when saturated with oil.

No back-breaking scrubbing, no dangerous solvents, caustics, or other odorous cleaning chemicals. No expensive, complicated machines.

SOL-SPEEDI-DRI is stocked by distributors and warehoused in all leading cities. Write your name and address on the margin of this page for a generous, Free Sample.

SUPPLIERS: East — Refiners Lubricating Co., New York 1, New York.
Midwest & South — Waverly Petroleum Products Co., Philadelphia 6, Pa.
West Coast — Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SOL-SPEEDI-DRI
OIL AND GREASE ABSORBENT



MEWA Officers Named At Annual Meeting

The Board of Directors of the Motor Equipment Wholesalers' Association held their annual meeting and election of officers and directors on May 14 and 15 at the Stevens Hotel, Chicago. The results of these elections were as follows:

Walter T. Mills, Auto Parts Company, St. Louis, Missouri, Vice President of the Association for the past year succeeded William P. Butt, Chesapeake Auto Supply Company, Norfolk, Virginia, as President. Franklin P. Gaul, Gaul, Derr and Shearer Company, Philadelphia, Pennsylvania, succeeded Mr. Mills as Vice President for 1945. As Secretary, Herbert Gillis of Gillis and Warren, Ltd., Winnipeg, Canada, succeeded Rue B. Norcross, Reinhard Brothers Company, Minneapolis, Minnesota, and Tom A. Walsh, Chanslor and Lyon Company, San Francisco, California, succeeded Mr. Gaul as Treasurer.

The newly elected Directors to succeed retiring Board members are: Clarence E. Beeson, Southern Bearings & Parts, Charlotte, N. C., Joseph Sirotek, Illinois Auto Electric Co., Chicago, Ill., Carl L. Johnson, Johnson Brothers Auto Supply Co., Wichita, Kan., John N. Grosswy, Hendrie & Bolthoff Mfg. & Supply Co., Denver, Col.

Ford Purchases Site For Parts Depot

Ford Motor Co. has purchased a 12-acre site and announced plans for an \$800,000 parts depot at Seattle, Wash., to serve Ford dealers in the state of Washington, Northwest Idaho, and most of Oregon. The depot is one of several to be built as part of the company's \$150 million postwar expansion program.

A weak battery in a car causes slow starting, which means gasoline is pumped through the cylinders without being used, and contributing to rapid wear.

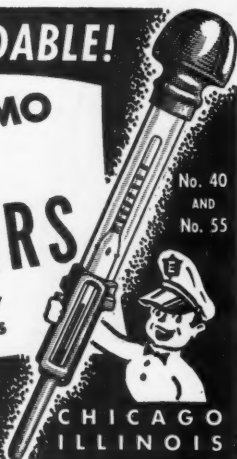
ACCURATE! DEPENDABLE!

Edelmann THERMO
"Break-Not"
HYDROMETERS

The Standard or Battery
Testing Instruments

E. EDELMANN & CO.

CHICAGO
ILLINOIS



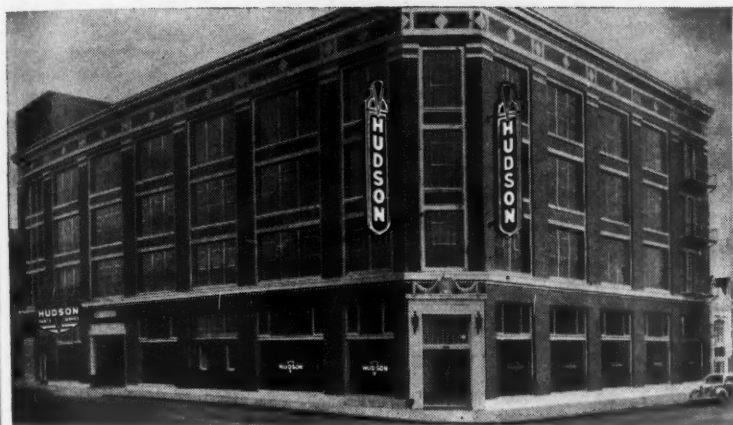
INSPECT-COLLECT
THE MAREMONT WAY



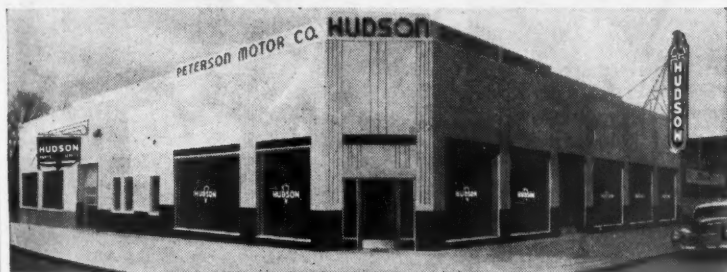
MAREMONT AUTOMOTIVE PRODUCTS, INC. - CHICAGO 8, ILLINOIS

"We're getting ready for big business"

... SAY HUDSON DISTRIBUTORS AND DEALERS



Belmont J. Sanchez, Inc., Dealer, Los Angeles, Calif.



Peterson Motor Co., Distributor, Boise, Idaho



Hutchinson Motor Car Co., Distributor, Hutchinson, Kansas

THERE ARE many good reasons why Hudson, after the war, is going to get a substantially larger share of the automobile business.

First, there is the splendid record of reliability, performance and endurance made by the cars themselves since Pearl Harbor—and the uniformly fine service given owners, under Hudson's expanded parts merchandising program.

Then, there is the aggressive spirit of a strong and steadily growing distributor-dealer organization, whose new building and remodeling plans are aimed at big volume business the country over.

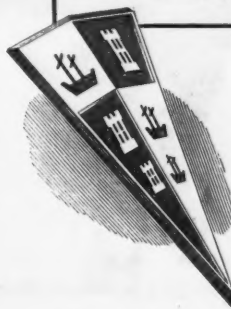
Back of these things, there is a product program which will deliver a highly competitive line of fine automobiles, built in plants that have the capacity, the engineering and the experience required for the job.

From coast to coast, this opportunity is attracting strong, able, well financed business men to Hudson—one of the eight oldest names in the industry.

HUDSON

HUDSON MOTOR CAR COMPANY
DETROIT 14, MICHIGAN

35 Years of Precision Manufacture



When new cars can be built again, the Hudson Triangle, long a symbol of craftsmanship and quality, will identify outstanding Hudsons—product of the combined war and peacetime experience of this veteran organization.

(Below) Welty Motor Car Co., Distributor, Houston, Texas



OUR PLANTS ARE DEDICATED TO WAR PRODUCTION — OUR DEALERS TO MAINTAINING WAR TRANSPORTATION

JUNE, 1945

When writing to advertisers please mention Motor Age

73

★ ★ ★ ★ ★ ★ ★ A S S O C I A T I O N



Plan now for their home-coming! Known products—well made and well displayed—that's what they'll want.

Manufacturers of the
CENTURY, RICHLAND,
DISTRIBUTED THRU

MEANS EVERYTHING ***

NOTHING about a tire can be more important than who makes it — and who sells it.

Men, as well as methods, leave their imprint of excellence on a product. Selling, too, is mostly a matter of men. In these unwritten "human" specifications, you find the only valid guarantee of satisfaction.

The foundation of Mansfield's claim to tires of unsurpassed quality rests on the leadership and training, the experience, skill and know-how of the men who build them.

Mansfield's faith in the future is that a product honestly made always can be sold most efficiently, and with greatest satisfaction, through free and independent jobber distribution channels.

★ ★ ★ ★ ★

Mansfield's jobbers are more than distributors of merchandise. They, also, are arbiters of quality...value...price. By independent choice and through deserved confidence of jobbers, dealers and users, tires made by Mansfield have earned their enviable reputation for service and dependability.

THE MANSFIELD TIRE & RUBBER CO. • MANSFIELD, OHIO

Following Well Known Tires—

MANSFIELD, UNITED

WHOLESALE EXCLUSIVELY



MODEL F-100

\$177⁵⁰

SLIGHTLY HIGHER
IN FAR
WEST

**NO PRIORITY
REQUIRED**



**FAST in-the-car
CHARGING never
paid Better
Dividends than
Right Now!**

**PUT YOUR BATTERY
SERVICE DEPARTMENT ON
A MORE PROFITABLE BASIS**

**THESE OTHER PRODUCTS
NOW AVAILABLE**

1. Gauges — (Compression and Vacuum)
2. Growlers — (Armature)
3. Synchrographs — (Distributor Testers)
4. Test Stands — (Generator, Starter and Magneto)
5. Tune-up Testers — (Coil, Condenser, Volt-Amp., Tachometer and Contact Angle)
6. Timing Lights and Cell Testers
7. Puller Presses and Radiator Test Plugs
8. Undercutters and Magnetizers
9. Welders — (Arc and Spot)

The Allen F-100 is the ideal fast charger for super service stations, car dealers and parking lot operators. It has plenty of eye-appeal to impress your customers. It's easy to operate. And it includes a battery tester! Thus you can render COMPLETE IN-THE-CAR SERVICE.

Today more car owners need immediate attention than ever before. Cash in NOW—with this Allen F-100! You'll save time and manpower. You can reduce your rental inventory. Let the nearest Allen jobber explain how he can handle the priority rating for you, or write us.

ALLEN Equipment

ALLEN ELECTRIC & EQUIPMENT CO.
KALAMAZOO, MICH.

Western Auto to Increase Outlets

Major concentration in the hard goods and automotive fields is listed as one of the post-war decisions of Western Auto Supply Co. of Missouri in a statement released by Lester Hutchings, president.

The contemplated doubling of company-owned stores, and trebling of dealer outlets called Western Auto home-owned associate stores indicates that the company will be a bigger

factor in the distribution of automotive parts and accessories.

The expansion plan calls for the following goals as well as others regarded as confidential: 1. Increase in company-owned retail stores from the present 240 to about 500 East of the Rockies. 2. Increase in dealer retail outlets (known as Western Auto Associate Stores) from the present 1481 to about 5000. 3. Greatly enlarged advertising program; with main emphasis on newspaper advertising.

Valvoline Company Moves To New Location

The Valvoline Oil Company has announced its move from 580 E. 5th Street, Cincinnati, to the new quarters at 431 Main Street, Cincinnati 2, Ohio. The company's new site is on Government Square in Cincinnati, Ohio.

Borg-Warner Adds New Organizations

The Owatonna Tool Company, Owatonna, Minn., manufacturers of gear and bearing pulling equipment for automotive and industrial use, and maintenance hand tools, and the AP Parts Corp., Toledo, Ohio, manufacturers of automobile mufflers and tail pipes, are the two latest organizations to be added to the 15 firms whose products are marketed abroad by Borg-Warner International. The announcement was made by J. L. Cunningham, general manager of Borg-Warner.

New Plant Construction

Delco-Remy Div. of General Motors will start construction as soon as Governmental regulations will permit on a new storage battery manufacturing plant at New Brunswick, N. J. A 27-acre site already has been purchased. B. A. Dollens, manager of Delco-Remy operations, will supervise building and operation of the new plant.

**WITTEK
NOC-OUT
HOSE CLAMPS**




For over 20 years standard of the automotive industry for dependable hose connections.

WITTEK MANUFACTURING CO.
Chicago 23, Illinois

**WITTEK
HOSE CLAMPS**
Dependable Hose Connections



PROVE For Yourself How NUGGETS Will Save You Money!



?

DO YOU HAVE A
3/8" DOUBLE HEX SOCKET IN
BOTH THE 3/8" AND 1/2" DRIVES



?

DO YOU HAVE A
RATCHET IN BOTH
THE 3/8" AND 1/2" DRIVES



?

DO YOU HAVE A 3/4" DOU-
BLE HEX SOCKET IN BOTH
THE 3/8" AND 1/2" DRIVES

SPOT-CHECK
your **PRESENT** wrenches

...Every entry in the 3/8" column,
which duplicates an entry in
the 1/2" column, means **DOUBLE**
INVESTMENT... **DOUBLE RE-**
PLACEMENT HAZARD... **LOST**
TIME IN FITTING SOCKETS ON
THEIR CORRESPONDING DRIVE!

Yes... Costly, Inconvenient DUPLICATION is Necessary with Present Wrenches... but will be ABOLISHED BY NUGGETS

CHECK up on your present wrench equipment! You'll be amazed at the duplication! And, in a flash, you'll see the advantage of NUGGET Socket Wrenches. NUGGETS offer the FULL RANGE of sockets and handles in ONE DRIVE for all work which otherwise requires wrenches in TWO DRIVES! All need for 3/8" and 1/2" wrenches is abolished. NUGGETS, in ONE DOUBLE-DUTY DRIVE, reduce your original investment, slash replacement costs and help you do better work!

NUGGETS will be made again, when wartime limitations are lifted on the super-grade steel required for this wrench miracle. So don't buy old-fashioned wrenches unless you absolutely need them. NUGGETS are worth waiting for.

TO PRESENT NUGGET OWNERS: If you have lost any of your NUGGET Wrenches, see your Blackhawk Jobber. He will arrange delivery of the replacements. Blackhawk wishes to protect the investment of present owners, even though NUGGETS cannot be made and sold on a mass scale to new buyers until after the war.

A product of **BLACKHAWK MFG. CO., Dept. W665, Milwaukee 1, Wisconsin**

Inventory of 3/8" Drive	Inventory of 1/2" Drive	TYPE OF WRENCH
		Ratchet
		Short Hinged Offset
		Long Hinged Offset
		Short Extension
		Medium Extension
		Long Extension
		Sliding T
		Brace
		Grip Handle
		Handle Bar
		Universal Joint
		Drag Link Socket
		HEXAGON SOCKETS
		5/16" Hexagon Socket
		11/32" Hexagon Socket
		3/8" Hexagon Socket
		7/16" Hexagon Socket
		1/2" Hexagon Socket
		9/16" Hexagon Socket
		19/32" Hexagon Socket
		5/8" Hexagon Socket
		21/32" Hexagon Socket
		11/16" Hexagon Socket
		3/4" Hexagon Socket
		13/16" Hexagon Socket
		7/8" Hexagon Socket
		15/16" Hexagon Socket
		1" Hexagon Socket
		1-1/16" Hexagon Socket
		1 1/8" Hexagon Socket
		1 1/4" Hexagon Socket
		DOUBLE SQUARE SOCKETS
		3/8" Double Square Socket
		7/16" Double Square Socket
		1/2" Double Square Socket
		9/16" Double Square Socket
		5/8" Double Square Socket
		3/4" Double Square Socket
		LONG HEX. SOCKETS
		7/16" Long Hex. Socket
		1/2" Long Hex. Socket
		9/16" Long Hex. Socket
		5/8" Long Hex. Socket
		11/16" Long Hex. Socket
		3/4" Long Hex. Socket
		13/16" Long Hex. Socket
		7/8" Long Hex. Socket
		15/16" Long Hex. Socket
		1" Long Hex. Socket
		1 1/8" Long Hex. Socket
		HEX. UNIV. JOINT SOCKETS
		3/8" Hex. Univ. Joint Socket
		7/16" Hex. Univ. Joint Socket
		1/2" Hex. Univ. Joint Socket
		9/16" Hex. Univ. Joint Socket
		5/8" Hex. Univ. Joint Socket
		11/16" Hex. Univ. Joint Socket
		3/4" Hex. Univ. Joint Socket

BLACKHAWK **NUGGET**
SOCKET WRENCHES

THE WRENCHES
THAT SMASHED
TRADITION

The Longer You Deal the more You Realize

*American
Brakeblok*

BALKAMP

TRICO

DUCKWORTH

*Allied
WISCONSIN*

ECHLIN

Spicer

**DOUBLE
DIAMOND**

PURITAN

FEDERAL

RARITAN

Buffalo

DETROIT

MicroTest

*Allied
RAYMOND*

MARTIN-SENOUR

Belden

DITTMER

BROWN LIPE

*Allied
PRECISION*

UNITED

CELORON

*Allied
A.P.C.*

STANDARD

**MONMOUTH
PRODUCTS**

New Britain

*Allied
GRAPHO*



with Your NAPA Jobber there Is a Difference!

● Only the repairman who deals day in and day out with his NAPA Jobber can fully appreciate the *plus* values in NAPA service on parts and supplies . . . An occasional pickup doesn't begin to tell the story.

The NAPA Jobber *has* something that no other jobber possesses. He has at his command all the facilities, and all the experience, of the largest independent parts organization in the automotive industry.

HOW DOES THIS HELP YOU?

For one thing, it means that your NAPA Jobber always has in stock the great majority of the parts you need for cars, trucks and tractors of all makes. Scientific methods of stock control made possible by the NAPA system of distribution, are responsible.

Moreover, it means that your NAPA Jobber can replenish his stock overnight—or secure the seldom-needed parts that no jobber can afford to stock—from his nearby NAPA Warehouse.

The 38 NAPA Warehouses that blanket the country maintain master stocks of all NAPA lines. Your NAPA Jobber doesn't have to wait for "shipment from the factory." *And neither do you!*

ONLY ONE QUALITY

There can be no doubt about the quality of the NAPA parts your jobber sells you. NAPA distributes only parts which equal or surpass in quality, the parts they replace. The genuine quality of these nationally-known lines is doubly assured by the makers' reputation and the NAPA Seal.

MORE TIME TO THINK ABOUT YOU

Finally, because the NAPA Jobber has the support of national organization—of practical systems and methods that cut down the time he has to spend on details and "paper-work"—the NAPA Jobber has *more time* to acquaint himself with *your* problems, and to gear his own organization to help you meet them. To put it briefly—

*Your NAPA Jobber
is a Good Man to Know!*



★ Buy MORE War Bonds—and KEEP Them

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

Keep asking

Had your BRAKES CHECKED LATELY?



Be sure to inspect the brakes and recommend relining before drums are damaged.



**GATKE
Brake Block**

**GATKE Brake Blocks
and Liners
are CUSTOM-BILT
for all requirements
from the largest
Truck, Tractor, Trailer
or Bus to the smallest
passenger car.**

As conservation of tires and motorized equipment grows more critically important, the many extra values of GATKE CUSTOM-BILT Brake Lining offer increasing advantages—

The smooth, non-grabbing action adds countless miles to tire life, promotes SAFETY and driving comfort.

Extra Wear Life means added miles of dependable service with fewer adjustments.

Ease of installation, combined with correct quality materials gives better relines quicker—avoids complaints and time-consuming adjustments.

GATKE CUSTOM-BILT Brake Lining is made for all requirements. Furnished in Boxed Sets with complete labels. Drilled Sets for 90% of vehicles. Simplified Catalogs. Many other time-saving features.

Ask your GATKE Jobber or write

Gatke

BRAKE LININGS

BLOCKS
SETS
ROLLS
SHEETS

GATKE CORPORATION

228 N. La Salle
Chicago 1, Ill.

CLEAN FAST— CLEAN WELL!

Use Magnus Methods and Materials to clean fast and well and insure a really effective preventive maintenance program.

MAGNUS CHEMICAL CO.
174 South Avenue, Garwood, N. J.

MAGNUS Automotive Cleaners

GET LONGER,
TROUBLE-FREE PERFORMANCE

with
Pedrick
precisioneered

PISTON RINGS

in guaranteed
ENGINEERED SETS

For every Car, Truck,
Bus and Tractor

NSPA Drafts Plans For Chicago Meet

From all parts of the United States and Canada, leaders of the automotive after-market will gather at the Hotel Sherman in Chicago, June 20 to 23, inclusive, for the annual mid-summer executive conference of the National Standard Parts Association. This business meeting will be attended by approximately 80 of the association's officers and committeemen.

As representatives of a dual-type association, the NSPA executives will deal with problems of both production and distribution, many of them having to do with business reorganization to meet postwar conditions.

The first scheduled session on a crowded four-day calendar is that of the Membership Committee which this year is headed by Don Teetor of the Perfect Circle Co. Mr. Teetor's group, composed of wholesaler and manufacturer executives, will devote an entire day to the general subject of association building.

Merchandising methods, business analysis and standard procedures will dominate discussions of the Marketing Research Committee meeting on the second conference day. At the June meeting, the group will review progress which has been made in the development of NSPA's machine shop studies, an extensive program started in 1944. H. B. Truslow, wholesaler of Richmond, Va., who did an outstanding job as committee chairman last year, again is serving in that capacity.

Important full-day meetings also are slated for the association's three product groups, comprised of manufacturing company officials who are assigned the responsibility of dealing with specialized problems in connection with the production and distribution of replacement parts, shop equipment, and accessories and supplies.

In line with established custom, the work of the entire conference will be crystallized in a meeting of the combined divisional governing boards meeting as the NSPA Board of Directors on the final day. President W. D. Kirkpatrick will preside.

Association officials say the June conference this year should be greater, both in size and accomplishment, than any previous mid-year meeting.

Nearly all late model cars have hypoid gears in the rear axle and helical gears and synchronizing cones in the transmission. For long life and satisfactory operation, these require definite types of oil. Some require changes spring and fall, as to grade of oil. Others can use the same the year around—but the level on all should be checked periodically—General Motors User's Guide.

FLEX-O-TUBE

PRODUCTS

FOR FLEX LINES

The Flex-O-Tube Company pioneered the development and the manufacture of flexible hose assemblies for gasoline, oil, hydraulic, pneumatic, high pressure grease and other services. Flex-O-Tube's research engineers are constantly broadening the field of application of flexible hose assemblies and improving their capacity and quality.

"You Can't Yardstick Experience or Workmanship"

Flex-O-Tube

LAFAYETTE at 14th AVE.,
DETROIT 16, MICHIGAN
Offices: CHICAGO · FORT WORTH
LOS ANGELES · NEW YORK
SEATTLE · TORONTO, ONT.

Catalog Released

A new catalog, No. 9, just released by the Lonn Manufacturing Co., P. O. Box 394, Indianapolis, Ind., describes their complete line of Lonn Air Saver Blow guns, Air Savor Spray Guns and Water Savers, with specifications and how they may be used.

The new catalog contains 24 pages and a detailed explanation of the patented Lonn "Piston Principle" which makes the Lonn valve "efficient and economical under any circumstances."

Lonn valves are claimed to operate at the touch of a finger, give positive control of air or liquids at either high or low pressures.

New Appointment

C. W. "Ted" Grange has joined MacFarland, Aveyard & Company as editorial director of the public relations department, it was announced. Grange was advertising and public relations director of Stewart-Warner Corp. before receiving his present appointment with the Chicago firm.

Low tire pressures on automobiles, or uneven pressures, sometimes cause uneven braking and skidding. Therefore, for safety as well as tire conservation, check tire pressures regularly and make sure valve stem caps are in place.

Joins Walker Staff

The Walker Manufacturing Co., Racine, Wisconsin, announces that Culver O. Spencer has recently become a member of its sales department.

For the past year, Mr. Spencer has been in charge of market analysis study for the National Standard Parts Association. Prior to that time, he was Chief of the Shop Equipment Section, Automotive Division, W.P.B., Washington. Under his direction, L. O. L-270 and L-322, the shop equipment and jack orders, were created and placed in operation.

With Walker, Mr. Spencer's responsibilities will include market research and sales and distribution studies.

New Construction Plans Slated by General Motors

Plans for the erection of an automobile assembly plant at Wilmington, Del., were announced by C. E. Wilson, president of General Motors. The plant, to be built as soon as war conditions permit, will be used for the assembly of Buicks, Oldsmobiles and Pontiacs.

The new plant will be erected on a 125-acre site and will be largely of one-story construction. It will have approximately 1,000,000 square feet of floor space.

The Wilmington plant will be one of a number of new plants planned by General Motors for post-war expansion. Purchase of land near Kansas City, Mo., also has been announced by General Motors.

Logan

A NAME TO REMEMBER WHEN YOU THINK OF BETTER LATHES

BUILT BY MEN WHO VALUE PRECISION



The men who build Logan lathes place a premium on precision. From their own daily experience in building precision machines they know how vital accuracy is. Not only Logan executives and engineers, but also the men in the shops, share in an all out determination to keep the Logan Lathe the most accurate in its field. This unflagging accent on accuracy from the first assembly to the final testing has done more than anything else to make the Logan Lathe outstanding in precision as well as in rugged strength. It explains, too, why so many industrial executives are depending on Logan Lathes both in tool rooms and on production lines. Ask your Logan Lathe dealer, or write for full information on all models of Logan Lathes.




BRIEF SPECIFICATIONS common to all Logan Lathes: Swing over bed, 10 1/2"; Bed width across ways, 6-15/16"; Bed length, 43 1/4"; Size of hole through spindle, 25/32"; Spindle nose diameter and threads per inch, 1 1/2"-8; 12 Spindle speeds . . . 30 to 1450 r.p.m.; Size of motor . . . 1/2 or 1/3 h.p., 1750 r.p.m.; Preloaded precision ball bearing spindle mounting; Drum type reversing motor switch and cord; Precision ground ways, 2 prismatic "V" ways, and 2 flat ways.

LOGAN ENGINEERING CO.
CHICAGO 30, ILLINOIS

C-2



"... and put in oil that's two months old. I want my husband to think I had the oil changed when he told me to."

Give Your Customers
EXTRA SAFETY
at No Extra Cost



with **GUIDE SEALED BEAM HEADLAMP UNITS**

Guide metal-backed Sealed Beam headlamp units are designed to give accurate distribution of light throughout the long life of the unit. Not only that, but Guide Sealed Beam headlamp units give your customers an *extra* margin of safety by reducing the chances of "one-eyed" driving in the event of a lens becoming cracked or broken . . . *double* protection against complete lighting failure.

**NO
DIM
OUT**

**NO
BLACK
OUT**

There is no dim-out *and* no black-out with Guide Sealed Beam lighting. The headlamp units are permanently sealed to keep out dirt, dust and traffic film. Within each headlamp unit is a separate bulb. If a lens becomes damaged or broken, the Guide Sealed Beam unit will continue to give safe lighting until the damaged unit can be replaced.

Your customers will appreciate Sealed Beam lighting at its best with Guide metal-backed Sealed Beam headlamp units. Give them that *extra* margin of safety at no extra cost . . . help them be safe with GUIDE.

*Let's all fight—***BUY MORE BONDS**

**Let Safety
Share the Ride—
Replace with Guide**

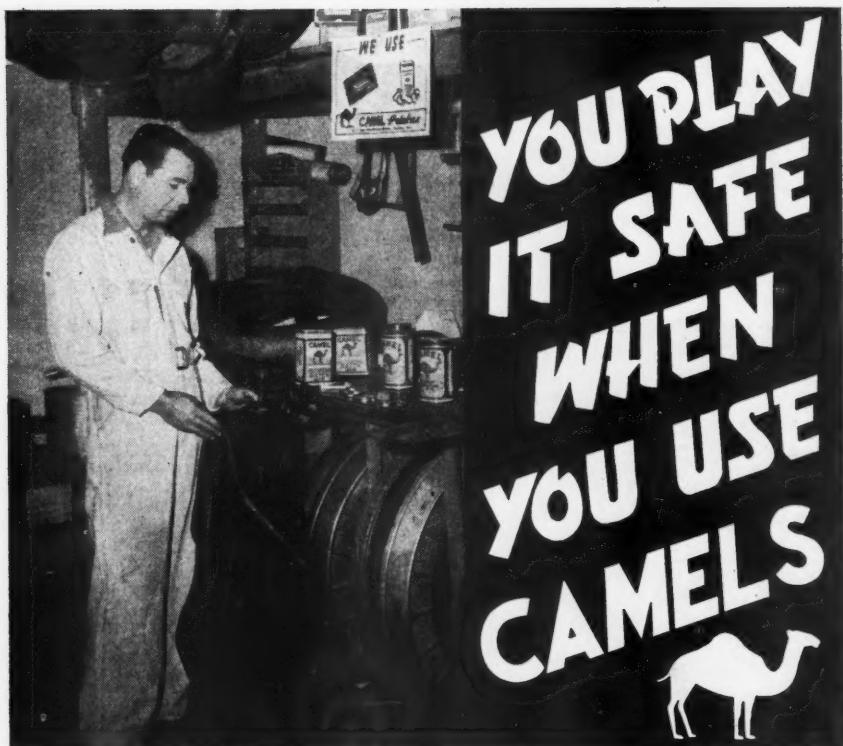
**GUIDE LAMP—
A UNITED MOTORS LINE**



Guide Sealed Beam replacement units and Guide lamp service parts are sold by United Motors Service distributors.

Guide
LAMP
 DIVISION OF GENERAL MOTORS
 ANDERSON, INDIANA

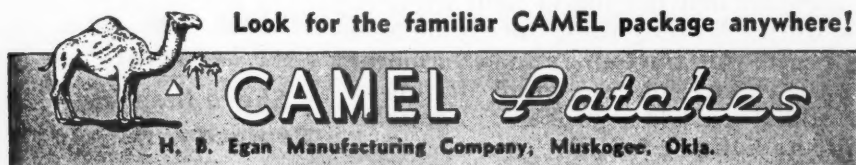
BUILDER OF AUTOMOTIVE LIGHTING EQUIPMENT



... because Everything Is In Your Favor!

When you use CAMELS on either synthetic or natural rubber tubes, you know you have the best combination of rubbers and the finest heat element, strictly laboratory controlled, guaranteed without reservation, and sold up to the same high standard for over 20 years. CAMELS are ideal for household repair jobs, too.

The top line, the top name, the top quality.



Other CAMEL Products available in the complete line are: Quick Cure Gum, Tube Repair Kits, Garage-size Kits, Vulcanizing Cement, Rubber Cement, Tire Patch Cement, Vulcanizing Kits, and Valve Stem Heat Units.

Hang-Up Data Chart

As an aid in making proper selections of flexible fuel lines, The Imperial Brass Manufacturing Co., 1200 West Harrison St., Chicago 7, Ill., has issued a handy hang-up data chart. This chart lists the flexible fuel lines used in the different makes and models of cars, giving types of line, manufacturer's part number, Imperial part used and list price. Copy of chart may be obtained by writing for manufacturer's form No. 10,137-E.

Leaflet on War Vets

A leaflet, "Jobs For the War Disabled" has been recently issued by the American Veterans Association, Inc., and is now ready for distribution without cost. Facts contained in the leaflet are informative and should prove helpful to anyone contemplating hiring disabled veterans.

This leaflet can be obtained by writing to American Veterans Association, Inc., 271 Madison Ave., New York 16, N. Y.

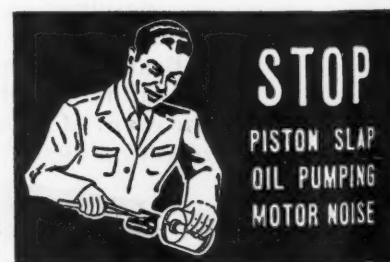
Chevrolet Sponsors Veterans' Job Training

Returning war veterans desirous of becoming automobile service men as a vocation in civilian life will find a comprehensive program available for their use, set up and functioning under the sponsorship of the Chevrolet Motor Division of General Motors Corp. This "on-the-job" training program, conducted in close cooperation with the Veterans' Administration and other federal, state, county and city agencies, was designed to assist in any way possible to do the best and most practical job of training World War II veterans.

Complete and varied refresher courses are available for honorably discharged Army-Navy mechanics, as are apprentice courses for vocationally handicapped veterans, all fitting them for employment as shop mechanics, bodymen and partsmen. Detailed operations of the training program in the field are handled through the eight Chevrolet regional and 37 zone offices.

Public Relations Head

The Eutectic Welding Alloys Co., pioneers in the field of Low Temperature welding, is announcing the appointment of John Paul Aprea as Advertising and Public Relations Director. This appointment is in line with the company's plan for the post-war expansion of its advertising facilities. Mr. Aprea is a veteran of the armed forces.



WITH

MASTER RECAMS

MASTER RECAMS are individually designed for all late model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.

50¢ EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS


WHERRY ENGINEERING COMPANY
3227-29 Morganford Rd., ST. LOUIS 16, MO.





CAN GET!

TODAY . . . immediately . . . get in touch with your **SUPER PYRO** jobber. He already has his allocation direct from U. S. Industrial Chemicals, Inc. He wants to distribute **SUPER PYRO** fairly to all. Call him now . . . *today . . . while you can still get yours.*



Your own Local Newspapers and your own Local Outdoor Posters—and National Magazines, too—will feature your **SUPER PYRO** in big strong advertising. New customers and old ones read this advertising. And they'll appreciate your service in providing them with genuine **SUPER PYRO** anti-freeze . . . *still super-safe!* You'll cash in if you *order your SUPER PYRO now—while it's still available to you.*



PLENTY PUSH!

Make sure of that stock of **SUPER PYRO** now.

You know that plenty of people prefer it. For the future, as well as for *this season's* profits you want folks to know you've got **SUPER PYRO**. All you've got to do is to *order now—while you can still get your share of SUPER PYRO.*

U. S. INDUSTRIAL CHEMICALS, INC.



BUILD-UP AND UP!

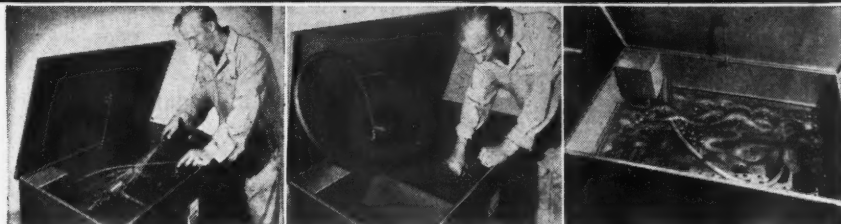
*Anti-Freeze that's
Anti-Rust, too!*



SUPER PYRO

ANTI-FREEZE

LESS CLEANING TIME—MORE PROFIT TIME

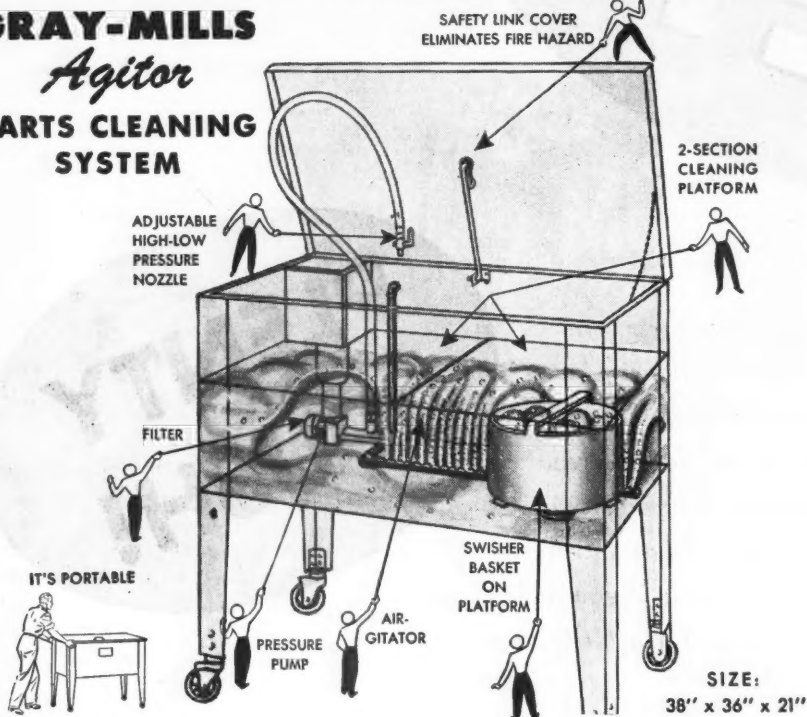


Pressure pump for spray-cleaning larger parts

Swisher basket for quick-cleaning smaller parts

Air-gitator for soak cleaning with constant agitation

GRAY-MILLS *Agitor* PARTS CLEANING SYSTEM



With an Agitor Parts Cleaning System, skilled mechanics clean parts faster and better—have more time for productive work. This safe, simple, low cost parts cleaner uses cold solvent—quickly removes oil, grease and grime from small

and large parts. It works 3 ways: 1—Soak cleaning with air agitation; 2—Small parts swished clean by hand "Swisher" Basket; 3—Spray cleaning with hose and powerful pump.

Write for literature.

GRAY-MILLS CO.

1943 Ridge Ave., Evanston, Illinois

GRAY-MILLS

PARTS CLEANING SYSTEM

Agitene Cleaning Solvents

BLUE CROWN HUSKY

Controlled Heat Zone
SPARK PLUGS

"Built to 'take it'
when the going
is toughest"

BLUE CROWN SPARK PLUG CO.
Division of MOTORMASTER PRODUCTS CORP.
1800 WINNEMAC AVE. CHICAGO 40, U.S.A.
Export Distribution: Borg-Warner International Corp., Chicago

Where
Secure
Seals Are
Vital

VICTOR

**GASKETS, OIL SEALS
GREASE RETAINERS**

Reo Filling Essential Truck, Tractor Needs

Reo truck and tractor models in medium weight (9000 to 15,990 GVW) and light-heavy weight (16,000 to 24,000 GVW) classifications are being produced under authorization of WPB for essential civilian service during 1945.

Many of these medium and light-heavy duty Reo units have already gone into commercial service and are being produced simultaneously with the Reo vehicles being built for the Armed Forces. They provide a wide range of wheel-bases, gear ratios, capacities and power ratings and are being released through Reo branches, distributors and dealers, as fast as they become available, to civilian operators holding ODT certificates of purchase.

Three Reo tractors are offered, two of them, 25 VXS and 25 VBS, have the same tractor-trailer maximum gross rating of 40,000 pounds. Both have six-cylinder engines developing a maximum of 127 brake horsepower at 2600 rpm.

The third tractor model, 20 XHS, has a maximum gross rating of 30,000 pounds and a 130-inch wheelbase. The six-cylinder engine develops a maximum 94 brake horsepower at 2400 rpm. A 5-speed direct-drive transmission is used and a 2-speed rear axle.

Reo 19 CHS and 19 BHS truck chassis have a maximum truck gross rating of 14,000 pounds. Each has a 4-speed transmission and is powered by a 6-cylinder Reo Gold Crown engine with 3½ in. bore, 4¼ in. stroke, 245 cu. in. displacement, developing a maximum of 89 brake horsepower at 3100 rpm. 19 CHS has a 165 in. wheelbase and chassis 19 BHS has a 145 in. wheelbase.

Two of the Reo truck models, 20 CHS and 20 BHS, have a maximum truck gross rating of 15,500 pounds and are equipped with 5-speed transmission. Both powered by a 6-cylinder Reo Gold Crown engine with 3½ in. bore, 5 in. stroke, and 288 cu. in. displacement, developing a maximum of 94 brake horsepower at 3000 rpm. 20 CHS has a 165 in. wheelbase and 20 BHS has a 145 in. wheelbase.

Reo's new city service coach includes a built-in pressure system of air circulation. Air enters the coach at front near the top. It is forced through a duct above the coach ceiling, then through the engine radiator and engine compartment, and leaves under pressure through rear vents.

Accessibility of major units and passenger comforts are claimed.

Lubricant in an automobile is really a structural part of the mechanism. To use the wrong oil is just as bad—or at least almost as bad—as putting in a repair part that doesn't fit—General Motors User's Guide.

Good Mechanics Throughout the World Say...

"THERE'S NO GOOD SUBSTITUTE" FOR

WRAPLOCK HOSE CLAMPS



USED and KNOWN EVERYWHERE . . . Throughout all the Americas, the British Empire, China, the U. S. S. R. and in liberated countries, ACTUS' WrapLock Hose Clamps are such familiar equipment on automotive, aviation, gun record mechanisms and other hose-equipped matériel that mechanics install them in blackouts.

INTEGRAL UNIT, NO LOOSE PARTS . . . Mechanics trust WrapLock Hose Clamps because they come in one piece. No loose nuts and bolts to come apart and drop when repairs are being rushed. They're PATENTED!

KEEP INVENTORY LOW . . . The highly flexible WrapLock Hose Clamps fit diameters from $\frac{3}{8}$ " to $3\frac{1}{2}$ " and several can be joined for larger diameters or for greater take-up.

BEWARE when a fellow says "just as good as and cheaper". What's back of his price policy? Who's back of the cheaper product? Patented products like WrapLock Hose Clamps make jobs and assure profits. "Quality remains when price is forgotten."

"Products of Experience Insure Your Future" . . . ACTUS HOSE CLAMPS, PISTON RING COMPRESSORS, VALVE GUIDE CLEANERS, BRAKE MASTER CYLINDER CLEANERS; EAGLE HOSE CLAMPS; WRAPLOCK HOSE CLAMPS



"Patents Make Jobs"

**WRAPLOCK
FIRSTS!**

Patented flat strap-type hose clamps.
A single unit strap hose clamp —
no parts to lose!
One clamp to fit $\frac{3}{8}$ " to $3\frac{1}{2}$ " hose.

ACTUS PRODUCTS COMPANY

MOUNT VERNON, NEW YORK

Radiator Leak?

TRY K & W FIRST!

RETAILS FOR \$1.00 AND WORTH IT!

There's EXTRA profit for you, over and above the regular liberal margin, on the special K & W "63" Seal. Ask about it!

Why experiment on leaky radiators? Use K & W Radiator Seal **FIRST**. . . either K & W will stop the leak in 30 minutes, or you'll know that *no seal* can do it, and it can be repaired **ONLY** by a competent radiator shop! K & W makes immediate repairs, requires no labor; does not affect hoses or thermostats; actually discourages rust and scale. Returns big cash profit on one dollar sale. Order now from your jobber. Kerkling & Company, Bloomington, Indiana.

Remember . . . if K & W can't fix it, **NO SEAL** can!

Metallic Seal

Mechanical Method

Two guaranteed means of repairing virtually every type of engine heat, freeze or stress crack. Ask your jobber about them.

A Check of War Time Gas Shows Marked Changes

A lot of poor performance and maintenance difficulties have been blamed on war-time gasoline, so the report by W. H. Paul of the Oregon State College at a recent meeting of the Society of Automotive Engineers on the Utilization of War-time Fuels is particularly interesting.

Comparing war-time fuels with those which we used prior to Pearl Harbor, some striking differences are found. There are also certain charac-

teristics which have not been changed or in which the change is so small as to be negligible.

Naturally, the most obvious change is found in the octane rating. Today's premium fuel is only one octane unit better than the regular grade of pre-war fuel, today's premium fuel being 75, and pre-war regular was 74 octane. Wartime regular grade-fuel is rated at 71.5 octane, about midway between pre-war regular and pre-war third grade fuel.

If war-time speed regulations were followed, this decrease in the anti-knock rating was no particular hard-

ship as the octane requirements of passenger cars at 35 m.p.h. on a level road are well below 70. The audible detonation experienced during acceleration and hill climbing, according to W. H. Paul, are usually of such short duration as to have no harmful effects. It is only under conditions of sustained heavy detonation that engine trouble occurs. Of course, this can, in most cases, be avoided by accelerating more slowly and by shifting to a lower gear when climbing hills.

In several characteristics of fuel there has been no change. Sulphur content and the vapor pressure, which is a measure of the fuel's tendency to cause vapor lock, show little change. The amount of gum in the fuel is also virtually the same as before the war.

By far the greatest change is found in the volatility or the tendency of the fuel to evaporate. Volatility affects not only the ease of starting, but also the length of the warm-up period, acceleration, cruising, crankcase dilution vapor lock, fuel consumption, mixture distribution and volumetric efficiency.

It is the opinion of W. H. Paul that hard starting during this period is caused by other factors than fuel quality and he bases his opinion on analysis of the fuel and on experience. Acceleration and warm-up, however, are definitely below pre-war quality. Also war-time fuels show a tendency to back-fire if road speeds of 55 m.p.h. are approached. It is also stated that any increase in crankcase dilution are probably due to change in operating conditions rather than to the decrease in fuel volatility.

Of course, there is a lot that can be done to overcome the decrease in the quality of war-time fuel. W. H. Paul points out that by increasing the temperature of the gasoline-air mixture only eight deg. that an additional 12 per cent of the fuel can be evaporated.

The use of higher temperature thermostats is helpful as is more careful adjustment of the automatic choke. Carburetor hot spots should be cleaned occasionally and, of course, complete tune-up and maintenance of compression pressures are essential.

ARO Lube Resumes Full Production

Withdrawal by the Government of Limitation Order L-314 will now permit full production of all types of lubricating equipment manufactured by The Aro Equipment Corp., Bryan, Ohio. A. C. Swygard, manager of the Lubrication Division announced. Up to this time, only the production of utility models was permitted.

Production expansion at Aro now includes all cabinet models and other types of equipment to serve the largest or the smallest lubricating departments.

There's
been a
big change



★ The tank wagon of the horseless carriage days has grown up. Huge transport tanks now serve America's millions of essential cars, trucks and tractors:

The demand for a better tapered roller bearing grew, too. And Tyson found the way to make that better bearing—by adding 30%

more rollers around the raceway.

Those extra rollers mean greater load-carrying capacity . . . extra rigidity . . . maximum efficiency . . . and *almost double bearing life*.

Tyson "All-Rolls" Bearings are solving heavy-duty problems for users everywhere. They'll do the same for you:



TYSON BEARING CORPORATION, MASSILLON, OHIO

COUNT THE ROLLS • THE ROLLS COUNT



Tyson

THE LAST WORD IN ANTI-FRICTIONEERING

PERFORMANCE

Performance is the true yardstick of quality in automotive bearings. Purchase price never indicates true value. It's the miles of smooth, dependable service that gives you the biggest return for your money. One way to be sure of getting real performance is to install Johnson Bronze Bearings. They are made to the same high standards of material, finish and precision as original equipment.

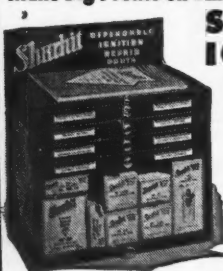
While the demands of our armed forces have curtailed the manufacture of most automotive bushings and bearings, we can still make excellent delivery on such parts as—Generator, Starter, Water Pump, Spindle Bolt, Clutch Pilot, Clutch Finger and Steering Sector Bearings. When you order these parts be sure to specify Johnson LEDALOYL, self-lubricating bearings. Write for new literature.

JOHNSON BRONZE CO.

455 SOUTH MILL STREET
NEW CASTLE, PENNA.



Make Big Profits on Small Investment in



SHURHIT IGNITION PARTS

Ask your Shurhit jobber or write us for details on General Ignition Assortments of fast-moving parts...Contact Points...Condensers...Rotors...Caps...Coils...Switches, etc.

SHURHIT PRODUCTS, INC.
Waukegan, Ill.



Fisher Brothers Seek Interest in Hudson

A bid by Fisher Brothers, Detroit automotive family, to acquire a controlling interest in Hudson Motor Car Co. through purchase of 400,000 shares of unissued stock at book value was revealed to stockholders by A. Edward Barit, Hudson President, at the annual meeting May 21. Book value of the stock on last December 31 was \$22.61 a share. The day before the meeting, however, the stock closed at 30¼ following a spectacular rise in recent weeks. No decision has been made on the offer, Barit said. Fisher Brothers are noncommittal.

Penn Rubber Company to Increase Tire Output

Pennsylvania Rubber Co., Jeanette, Pa., is speeding to completion the addition to its tire manufacturing facilities which will increase its production capacity by 200,000 large truck tires a year, according to Howard W. Jordan, President.

"The new addition will make available an additional 40,000 square feet of factory space for manufacturing military tires for the Armed Forces," Mr. Jordan said.

"We are rushing construction work on this new addition in order to help meet the increased demand of the Armed Forces, which need now large quantities of truck tires. It is our hope to have some truck tires rolling out of the new addition in a few weeks."

This represents the fourth major addition to the Pennsylvania Rubber Co. manufacturing facilities in the last two years.

Tire Chain Committee Questions Expansion

Members of the Tire Chain Industry Advisory Committee at a recent meeting requested War Production Board officials to investigate the necessity for new facilities now under construction, WPB reported. The industry, members said, is now meeting its schedules for tire chains and questions the advisability of continuing with the plans for expansion.

Previously the lag in tire chain production had seemed to warrant the construction of the new plants. The last few months, however, have seen a change in the situation and the tire chain industry, feeling that it is now "out of the woods," is asking WPB to explore the subject in light of present conditions. The new plants, they added, cannot be expected to go into production for months and with the facilities now in operation, if material is made available, the industry is confident of its ability to handle all orders.

Wagner CoMaX
is available in Sets, Rolls,

Brake Lining
Blocks, and Slabs



Whatever your requirements or preferences may be—whether drilled sets, rolls, blocks, or slabs—you'll find your choice in the Wagner CoMaX line. And no matter which type you choose, each is alike in the following characteristics:

1. Uniform in frictional qualities throughout the entire service thickness. As the lining wears, the same type of brake lining surface is always exposed to the drums.
2. Does not compress or swell. No changes in lining thickness take place, other than that caused by normal wear. Brakes remain adjusted over long operating periods.
3. Easy on drums. Contains no abrasive material.
4. Wears slowly. Its ingredients are carefully selected for extra-life properties.
5. Doesn't deteriorate with age. Whether in use, or on the shelf, CoMaX resists the elements.
6. Is quiet—grips silently, with no "howling" or "squealing".
7. Permits smooth, controllable deceleration. No jerking stops. CoMaX responds to the degree of brake application.

BRAKE LINING
is but one of several
WAGNER PRODUCTS
serving industry.

Other WAGNER PRODUCTS:

AIR BRAKES
HYDRAULIC BRAKES
INDUSTRIAL BRAKES
INDUSTRIAL
BRAKE CONTROLS
ELECTRIC MOTORS
TACHOGRAPH
(Recording Speedometer)
TRANSFORMERS

845-4

Try Wagner CoMaX on your next relining job. Let us send you Catalog BU-128 which lists CoMaX in sets, rolls, blocks, and slabs, and gives correct information for most passenger car, truck, tractor, and bus applications. Find out for yourself why Wagner CoMaX is the preferred brake lining for Quick, Safe, Smooth Stops.

Wagner Electric Corporation

ESTABLISHED 1891

6498 Plymouth Avenue, St. Louis 14, Mo., U. S. A.

HYDRAULIC BRAKE PARTS AND FLUID • AIR BRAKES • BRAKE LINING • CLUTCH FACINGS

As pioneers in hydraulic brakes, and as manufacturers of Lockheed Hydraulic Brakes for original equipment, as well as makers of hydraulic brake parts and fluid for replacement needs, WAGNER KNOWS BRAKES. Wagner also knows what qualities are required in a brake lining, and these qualities are to be found in CoMaX.



New Cabinet Lathe

Combining all the features of the standard Logan Quick Change. Gear Lathe in a compact cabinet, the new Logan No. 825 Lathe is adaptable to tool-room work, for maintenance, for training, or for production. The carriage, with friction-feed automatic apron, travels over a bed that is ground to within .0005 in. of absolute accuracy. Total run-out of its head-stock spindle 12 in. from the bearings is less than .001 in. The lead screw is held to within .002 in. in 12 in. The spindle turns on a double row of pre-loaded precision ball bearings, and at

40 other vital points friction is minimized by self-lubricating bronze bearings. All moving parts and gears are completely enclosed. The power plant and underneath drive are enclosed in the left compartment of the four-drawer, stipple-finish gray steel cabinet. A Multiple V-Belt Drive transmits power from cone pulley to spindle. Adjustments of both flat and V-Belt tensions are easily accessible to the operator.

Full information and complete specifications on this new Lathe may be obtained on request from Logan Engineering Co., 4901 W. Lawrence Ave., Chicago 30, Ill.

Cold Cleaning Solvents


The Gray-Mills Co. announces a new Parts Cleaning System, the P-72 and a new line of Agitene cold cleaning solvents.

This new parts cleaner is suitable for removing carbon, grease, grime, and gum from carburetors, fuel pumps, and other parts requiring concentrated solvents. It has a "Swisher" Basket which may be freely revolved back and forth to produce agitation.

It is also equipped with a means for providing air agitation to speed the cleaning process. This "Air-gitator" utilizes the existing air supply. The tank has a hinged cover and comes equipped with an air valve, hose and fittings. P-72 Parts Cleaning System has mounting brackets for attaching to a wall or work bench. Agitene cleaning solvents come in three types: Regular Agitene for general purpose cleaning; Super Agitene, a fast-acting solvent, for penetrating action, and Speed-Agitene, used for cleaning carburetors, fuel pumps, pistons and other parts.

Information on the P-72 Parts Cleaning System or on Agitene Solvents may be obtained by writing to the Gray-Mills Co., 1948 Ridge Ave., Evanston, Ill.

A check of an automobile battery every two weeks is wise in present times. Terminals should be clean and tight, to permit full current flow.



THREE HANDS

PULL BETTER THAN ONE

MANUFACTURER

DISTRIBUTOR

DEALER

Coordinated, well-planned activities of Manufacturer, Distributor and Dealer in the Automotive Aftermarket, gain even greater success when **ALL THREE** really **pull together**.

Automotive Advertisers Council (advertising executives of more than fifty Manufacturers—all talented and experienced "hands") are spreading still further the spirit of cooperation and mutual helpfulness to **ALL THREE** in the aftermarket. Objective:—better merchandising, better advertising, better distribution, better profit—a better job all around. The AP Parts Corporation, Toledo 1, O.

P

MILEAGE GETTING MUFFLERS

MEMBERS

Accurate Parts Manufacturing Company
 Ahlberg Bearing Company
 Aluminum Company of America
 Aluminum Industries, Inc.
 The AP Parts Corporation
 Bear Manufacturing Company
 Belden Manufacturing Company
 The Black & Decker Mfg. Company
 Blackhawk Manufacturing Company
 Champion Sears Plug Company
 Dayton Rubber Manufacturing Company
 Ditzler Color Division
 Pittsburgh Plate Glass Company
 The Dole Valve Company
 Dura Metal Products Company
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 P. & D. Manufacturing Company, Inc.
 Packard Electric Division
 The Perfect Circle Company
 Plomo Tool Company
 Purolator Products, Inc.
 Ramsey Accessories Manufacturing Corp.
 Raybestos Division of Raybestos-Manhattan, Inc.
 Resinflex Corporation
 Russell Manufacturing Company
 Sealed Power Corporation
 Standard Motor Products, Inc.
 Sunnen Products Company
 Thermoid Company
 The Toledo Steel Products Company
 United Motors Service
 Div. of General Motors Corporation
 United States Adams Division of Raybestos-Manhattan, Inc.
 Valvoline Oil Company
 Van Cleaf Brothers
 Wagner Electric Corporation
 Walker Manufacturing Co. of Wisconsin
 The Weatherhead Company
 White Automotive Division
 R. M. Hollingshead Corporation
 Wilkinston Manufacturing Company
 Willard Storage Battery Company
 Wohler Corporation



"Frankly, Hugo, I can't see my way clear to give you a raise on the grounds that you could use the money."

The WEIDENHOFF DISTRIB-U-SCOPE Shows You Complete Ignition Distributor Action

The Weidenhoff DISTRIB-U-SCOPE, stand-by of ignition service men for years, is the only instrument of its kind which instantly shows the complete action of breaker points in the form of a band of light for each dwell period. Reveals things not even suspected on a meter where only the average of all dwell periods are shown.

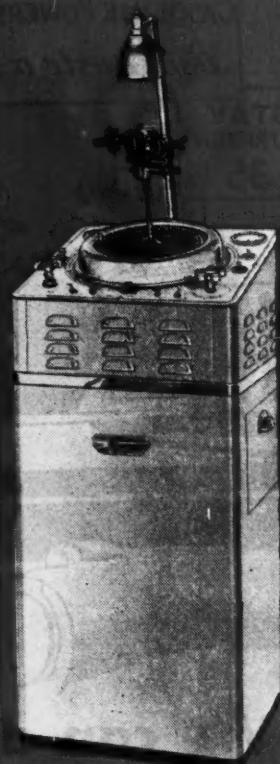
Besides showing breaker point opening and closing characteristics, the DISTRIB-U-SCOPE checks vacuum and mechanical governor advance. Checking specifications help you to adjust a distributor "right on the head."

You'll lick many so-called "rough" engines by servicing distributors in the DISTRIB-U-SCOPE.

Send for Full Particulars



JOSEPH
WEIDENHOFF
INC.
CHICAGO 24, ILLINOIS

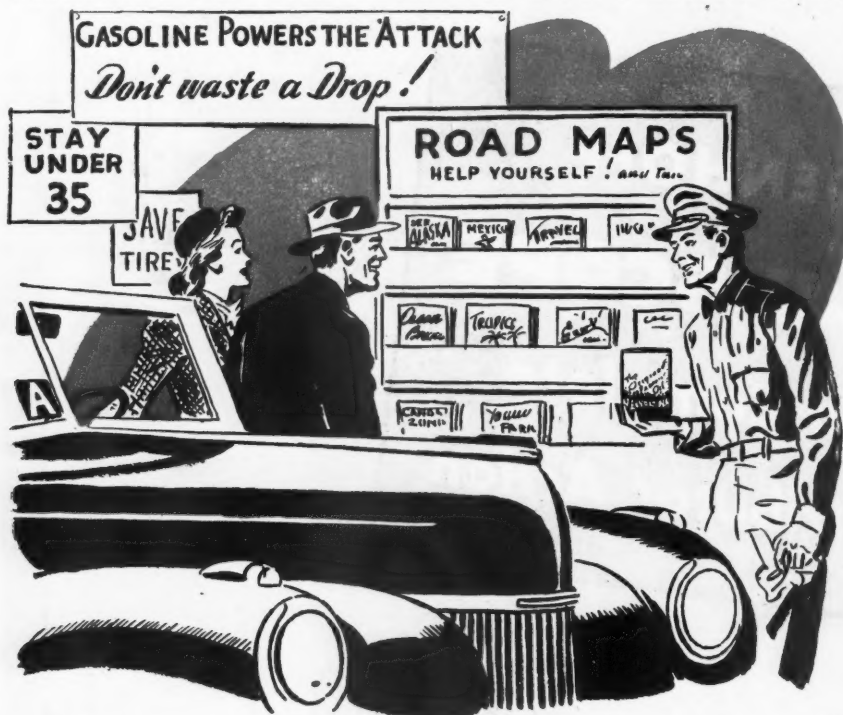


Above, Model 1037
DISTRIB-U-SCOPE, with
cabinet.



Left, Model 1039
DISTRIB-U-SCOPE, less
cabinet. Special Ford dis-
tributor adapter furnished
with other model.

VALVOLINE . . . FIRST OF THE PENNSYLVANIA OILS



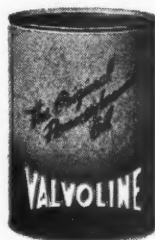
"We can dream, can't we?"

Everybody with an A-card dreams of the day when he can say "Fill her up!" and taste again the thrill of the open road. It will be a little late, then, to worry about whether his over-age motor can take the strain of peacetime speeds. Urge him to take sensi-

ble precautions NOW—first of all, to start conditioning his motor with Valvoline, the oil that keeps the engine clean as it lubricates. He'll be coming back to you for Valvoline REGULARLY years after that dream has come true.

VALVOLINE

MOTOR OIL



COSTS MORE TO MAKE — COSTS LESS TO USE

Unconditionally Guaranteed

VALVOLINE OIL COMPANY

431 Main St., Dept. 12F, Cincinnati 2, Ohio

New York-Atlanta-Chicago-Detroit-Los Angeles-Vancouver-Washington, D. C.—Refinery at Butler, Pa.

A MUFFLER IS MORE THAN A SILENCER

GUARD CUSTOMERS AGAINST CARBON MONOXIDE

MERIT MUFFLERS

MERIT MUFFLERS

BASCA MANUFACTURING COMPANY, INC.
Indianapolis 1, Indiana
MUFFLERS • EXHAUST PIPES • TAIL PIPES

Smash-Proof CREEPERS

Sold by all leading jobbers

Hulbert Creeper Co., Ashtabula, O.

New Turbosupercharger Described at Meeting

An aircraft engine part no bigger than a hat-box that uses exhaust gases to make its plane run faster, cheaper, and quieter, was described by technicians of the Wright Aeronautical Corp. at a meeting of the Metropolitan Section of the Society of Automotive Engineers. Proposals have already been made for the installation of the equipment in new types of commercial transports and warplanes, it was revealed.



The new type "turbosupercharger" is said to be lighter in weight, more compact, and more adaptable to varying aircraft engine arrangements than any other supercharger. Within its clam-shaped housing, the engine exhaust turns the turbo's turbine at 25,000 revolutions per minute to develop a compressing force as great as 150 horsepower.

That force, in turn, spins the turbo's centrifugal compressor in another section of the part to create a compressing power potent enough to raise water to the top of a six-story building, inflate truck tires, or ventilate the average home.

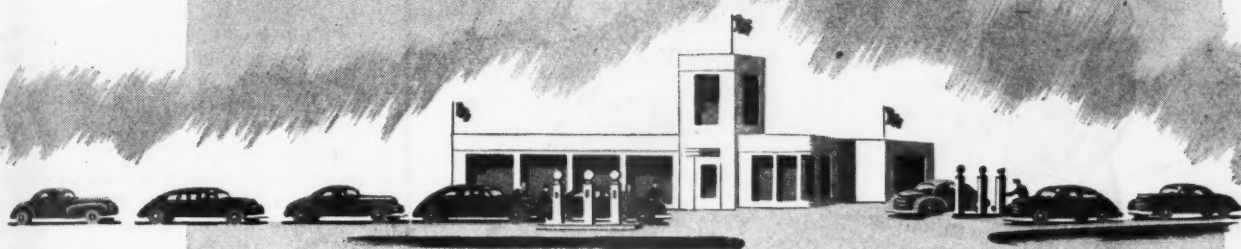
Installed behind the aircraft engine, the Wright turbo serves, like any other supercharger, to feed an abundance of air to the engine for fuel combustion where tremendous power is required, or at altitudes in which atmospheric air is not dense enough to permit an aircraft engine to "breathe" efficiently. But the turbo it was added, provides this current of air without exacting the toll of horsepower from the engine itself which is the cost of operating the conventional supercharger.

Referring to the virtues of the supercharger in increasing the comfort of air transport travelers, Wright Aeronautical engineers pointed out that the new equipment also muffles the roar of the aircraft engine to a point at which noise level within the

(Continued on page 96)

HARRISON THERMOSTATS

The Right Line For Profitable Service

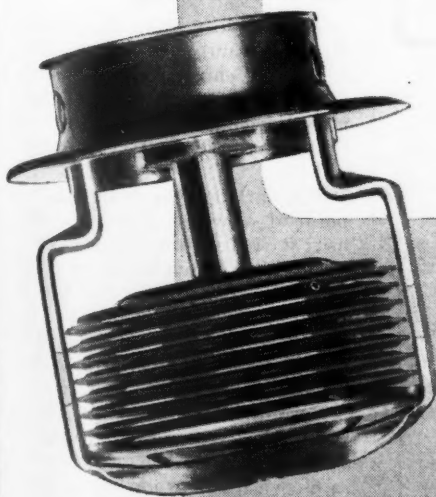


Make the Most of Your Profit Opportunities. When you lay in your stock of Harrison thermostats, you're ready to take care of the cars that come in for service. That's important business—and profitable business—because no cooling system can function satisfactorily if the thermostat is damaged, worn out or otherwise inoperative.

Harrison Thermostats are Right for the Job. Keep "on the alert" for complaints about overheating or slow warm-up—and if the trouble is in the thermostat, replace with a new Harrison thermostat. When you handle the Harrison line, you can give your customers the thermostat that is *engineered* for the job—*built* for long life. Your reputation for quality service is safe with Harrison thermostats.

HARRISON

HARRISON RADIATOR DIVISION
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK
KEEP BUYING MORE WAR BONDS



**HARRISON—
A UNITED
MOTORS LINE**



Harrison thermostats, complete radiators, radiator cores and tank parts are distributed nationally through United Motors Service.

A SWELL JOB EVERY TIME



HYGRADE REPLACEMENT PARTS

"Engineered for Old Units"



SPEEDOMETER CABLE
CASING, TIPS, SHAFTHING



CARBURETOR AND FUEL PUMP
PARTS IN CONTAIN A.I. KITS



FUEL LINES
& FITTINGS



HYGRADE PRODUCTS CO., INC. LONG ISLAND CITY 1, N.Y.



PURITAN
Super
BRAKE FLUID

**MAKES
RUBBER PARTS
LAST LONGER!**



Since 1897

**UNITED STATES
ELECTRICAL TOOLS**

have never swerved from their
original standards of **QUALITY
AND SERVICE**

**THE UNITED STATES
ELECTRICAL TOOL CO.**
CINCINNATI, OHIO

Turbosupercharger

(Continued from page 94)

average airliner is sharply reduced. The "baffling" of exhaust noise occurs in the surge of the exhaust through the turbo. With noise level reduced, it was explained, "passenger fatigue" on long trips will be reduced proportionally.

In the experimental work carried on to produce the advanced turbosupercharger design, valuable experience and important discoveries in the field of the gas turbine were also gained.

The turbosupercharger turbine was designed to withstand engine exhaust temperatures as high as 1700 degrees, heat great enough to melt the aluminum or magnesium in many other engine parts. One factor which has delayed successful development of jet propulsion and gas turbines until recently, it was noted, was the metallurgy of the turbine; in the past, alloys able to withstand high temperatures while under severe stress or rapid motion were not available.

The turbosupercharger's influence upon aircraft operating costs, it was claimed, arises not only from the fact that it employs exhaust gases which would otherwise be wasted, but also from the fact that it enables the airplane to operate at altitudes of 25,000 feet or more. At that sub-stratospheric level, it was pointed out, the Wright turbo not only enables the engine to develop "cruising power" identical with the cruising power attained at sea level; it may also be used in addition to "pressurize" passenger cabins. Pressurization in airplanes, already standard practice in such high-flying types as the Cyclone-powered Boeing B-29 Superfortress, creates within the airplane an atmospheric pressure equivalent to that found outside of the airplane below 10,000 feet.

Cable Catalog

The Crescent Co., Inc., Pawtucket, R. I., manufacturers of Wiry Joe wire and cable for automotive, marine, and aviation use, has just completed preparation of a new catalog that combines attractiveness and utility.

The catalog was designed from the point-of-view of the man who will use it in selling wire and cable. Tests have proved that the elimination of eyestrain means the virtual elimination of errors in reading figures; therefore, special care was taken in selecting the type used in the new Wiry Joe Catalog.

In addition to a complete listing of Wiry Joe wire, cable, terminals, tools and accessories, the new catalog contains valuable shop hints and car wiring data.

New Process

TRACTA

JOINT

VIBRATIONLESS
CONSTANT
VELOCITY

through sharp steering angles



- Simpler and smaller in diameter than other known constant velocity joints of equal torque rating, the New Process Tracta combines compactness with wide angular range, easy assembly, disassembly and maintenance.

The four simple parts are machined from forged alloy steel, and are selectively assembled for precision slip fits. Broad sliding surfaces are hardened, ground and oil-impregnated, eliminating brinelling and reducing wear and friction losses to negligible levels.

- Designed for today's more powerful engine torques, Tracta joints are especially suitable for front-wheel drives, multiple-drives, independently-sprung wheels, railroad inter-car drives, machine tools, conveyors, power take-offs, marine and aircraft applications. Write for sizes, torque capacities, operating and test data.



NEW PROCESS GEAR CORPORATION

Differentials, Axles, Transmissions . . . Aviation Gears

SYRACUSE, N. Y.

It is dangerous and unnecessary to use kerosene, gasoline, or other inflammable liquids to remove accumulations of oil and grease from floors, steps or service pits. OIL-DRI (All-Purpose) does the job better, quicker and with perfect safety.

Get Rid of Slippery Oil and Grease Accumulations...

WITH

OIL-DRI
ALL-PURPOSE
Reg. U. S. Pat. Off.

Absorbs oils, greases, soluble oil and water solutions from floors, steps and grease pits where there is constant danger of fire and slipping accidents on oil or grease spots or on oil-and-water "slicks."



The systematic use of OIL-DRI (All-Purpose) is the best and easiest way to prevent dangerous accumulations around equipment, on shop and garage floors and in service drive-ways. It restores unsightly oil stained floors to their original appearance and keeps them dry and skidproof.

Member of National Safety Council



Oil-Dri Company 5036 N. RAVENSWOOD AVE.
CHICAGO 40, ILLINOIS
OF AMERICA

Everhot Products Display Assortments

Three dealer display-assortments of flexible gas, oil and oil filter lines has just been announced by Everhot Products Co. These passenger car and truck lines are made of DuPont Neoprene rubber hose, with brass end fittings and are described as oilproof, waterproof, and non-collapsible.

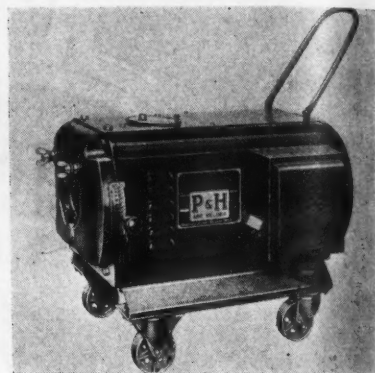
Assortment No. 5 contains 75 flexible lines in 11 popular models. Dealer price is \$29.75. Assortment

No. 6 consists of 27 flexible lines in 12 modern numbers. Priced at \$11.15. Assortment No. 7 contains 30 fast-selling flexible oil filter lines in 14 popular numbers. The Dealer price is \$21.00.

An anti-corrosive cement for perphrene flexible fuel, lubrication, air and oil filter lines has just been published. It describes and illustrates the new assortments. A copy may be obtained by writing to Everhot Products Co., 2055 W. Carroll Ave., Chicago 12, Ill., or 1406 W. Grand Ave., Los Angeles 15, Calif.

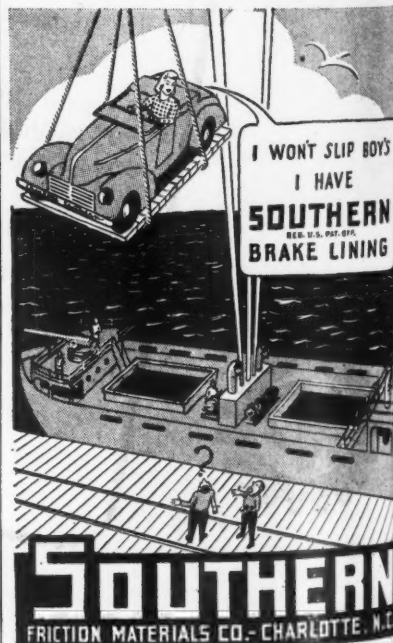
Arc Welding Machine

P&H engineers have introduced a new Model WA-300, which provides a Welding Service Range rating of from 60 to 375 amperes. Retaining the simple, compact design for the smaller square frame welders, the large model also retains the two-part construction, single heat control, visual current calibration, and adaptability to parallel operation where higher amperage is desired.

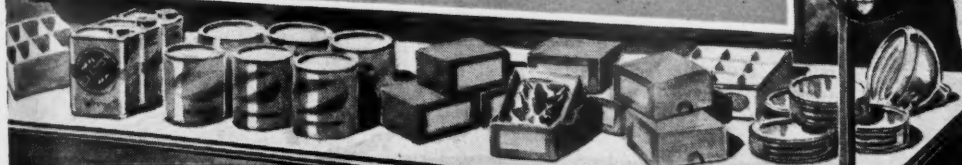


Appearing for the first time in the Model WA-300 are such new features as weather-proof construction, polarity reversing switch, and removable stator, plus overload protection both for contacts and for the new low-voltage magnetic starter. Those interested in further details may address the Harnischfeger Corp., Welding Division, Milwaukee 14, Wis.

A squeak or rattle in an automobile means friction and friction means wear. It is well worth the trouble to have all bolts, nuts and screws on a car tightened up at periodic intervals.



**"PRECISION PARTS MAKE MOTORS PERK
BRING BETTER PROFITS FROM BETTER WORK"
KING QUALITY**



KING QUALITY

**"Building for the future on a 25 year record"
ST. LOUIS 10, MO., U.S.A.**

**PISTON RINGS • PISTONS • PINS • VALVES
BOLTS • BUSHINGS • SILENT-U SHACKLES**



**BEARINGS • WATER PUMP PARTS
SLEEVES • WHEEL SUSPENSION PARTS**



FOR HEAVY-DUTY "Wear and Tear"

KEM offers the Dealer a line of Fuel and Vacuum Pumps which will afford excellent service and assure profitable business.

KEM Fuel Pumps are prefitted . . . designed on master gauges to replace faulty equipment. They are built for heavy-duty "wear and tear" with extra margins of strength in casting, machining, insulation and over-sizes.

Long life and satisfactory service are backed up by the KEM Registered Guarantee.

Write for the KEM Catalog and for the name and address of the KEM distributor in your area.

KEM
★ **KOMET**
Prefitted
KEM MANUFACTURING CO., INC.
401 West 26th Street, New York 1, N. Y.

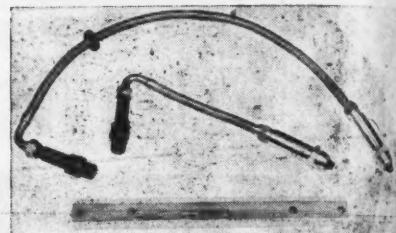
KEM
SILVER
ANNIVERSARY

Replace with **KEM**

High Frequency Ignition System Developed

A new ignition system developed by P. R. Mallory & Co., Inc., incorporates high frequency at the spark plug electrodes and low voltage generation and distribution to the spark plugs. While designed primarily for the aircraft field it is also of interest to automotive engineers.

Low voltage (approximately 1,200 volts) is generated in a magneto and



distributed through shielded leads to the spark plug. At the manifold ring, the low frequency energy of the magneto is converted to high frequency or radio frequency energy (2,000,000-3,000,000 cycles per second) by an impulse type frequency converter. At the spark plug, the low tension high frequency energy is stepped up to a voltage sufficient to jump the spark plug electrodes (approximately 10,000 volts) by means of a small transformer hermetically sealed in the well of a standard aircraft spark plug.

Mallory high frequency ignition permits the immediate opening of the throttle after long periods of idling, taxiing and gliding, with the assurance of full power delivery it is claimed. Under these three conditions, with conventional ignition the plugs are frequently fouled so that it is impossible to immediately obtain full engine power. High frequency energy at the spark plug electrodes, has the ability to ignite the cylinder charge despite fouled, leaded or carbonized plugs.

It is also claimed that with Mallory high frequency ignition, colder spark plugs are possible because of the system's ability to spark fouled plugs, thereby permitting increased engine output.

Reduction in spark plug gap erosion is accomplished by the use of the low electrical energy level and substantial reduction in radio interference over the complete frequency spectrum is also obtained.

As the high frequency ignition development effort to date has been primarily directed toward solving ignition problems for large military aircraft engines, the application of high frequency ignition to small aircraft engines for the personal airplane of tomorrow and for gasoline engines in other fields has not been thoroughly investigated and analyzed.

(Continued on page 102)



MOOG INDUSTRIES, INC.
ST. LOUIS, MO.

HYDRAULIC BRAKE CYLINDER CLEANER AND POLISHER



Pat. No. 2,348,132

Muck and scale quickly removed and brake cylinder polished to a mirror finish in a few seconds. Eliminates wasteful outside trips. Does the entire job in your own shop.
\$3.25 FROM YOUR JOBBER

THE HYLAND MANUFACTURING COMPANY
318 John Street Portsmouth, Ohio



It took a Sufflamen to slow down Lateranus

Sounds like double-talk, doesn't it?

Actually, Lateranus was an early Roman living in the first century. And "sufflamen" was the Latin word for brake. The word means "a blow under" which implies that the first brake was a pole or a wedge driven under a wheel.

Later, the Romans figured out other kinds of braking devices to keep their carts from zipping down the mountains of Italy at a dizzy pace. But their problem was simple compared to the job of building brakes for the automotive vehicles of today.

Brake Lining A Different Problem

Developing *brake lining* is not an automotive engineers' job, however. They leave that costly and difficult problem up to specialists like American Brakeblok whose job is and will be to manufacture the right types of linings for brakes of all kinds.

In our case, there are more than 50 years of brake experience back of the products we provide for the automotive industry. That's why a large percentage of all automotive manufacturers use American Brakeblok brake lining as original equipment.

5 Reasons Why YOU Should Sell American Brakeblok

Produced in one quality—the best . . . Tested, proved and used by leading manufacturers of cars, trucks, buses and trailers . . . Quickly available through 38 N.A.P.A. warehouses and 1100 selected jobbers . . . Strong consumer advertising since 1931 has built an acceptance exceeded by no other manufacturer of brake linings . . . Modern laboratories staffed by forward thinking engineers insure product improvements and new items for tomorrow.

**American
Brakeblok**

BRAKE LINING



Master stocks in 38 strategically located warehouses. Jobbers everywhere maintain complete assortments.



American Brakeblok Division ★ DETROIT 9, MICH.



Smooth running, long lasting power requires clean engines—engines free of sludge, gum and acid which accumulate in the lubricating system and cause the motor to become sluggish and unresponsive. Car and truck manufacturers insist that these petroleum residues are a major factor in destroying engines.

LOOSITE and **SILOO**, swift-working solvents of petroleum residues act quickly and safely to eliminate sludge, gum and acid. **LOOSITE** cleans out the engine—then **SILOO** added to fresh crankcase oil keeps it clean.

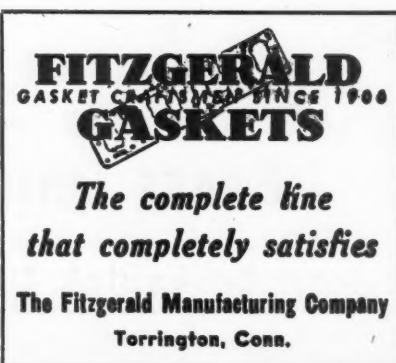
A simple, harmless, economical method of obtaining maximum performance and longer life.

Nationally advertised **LOOSITE** and **SILOO** are products of fifteen years standing. They are demanded by motorists everywhere. Nowadays when every mile is precious, and every lost day serious, preservation of irreplaceable motors is vital. See that your customers get this motor protection. Their cars will last longer and perform better.

If you heat with oil—write for information on **SILOO FUEL OIL TANK SOLVENT**.

PETROLEUM SOLVENTS CORPORATION

331 Madison Avenue, New York 17



Ignition System

(Continued from page 100)

It is expected the advantages of high frequency ignition will eventually result in its adoption to gasoline engines for many other applications, company officials stated.

Synthetic Truck Tire Performance Reported

Synthetic rubber truck tire performance is averaging around 70 per cent of that of prewar natural rubber tires. This report is based on a nationwide survey made by United States Rubber Co. field engineers as revealed recently by R. A. Blake, general service manager of the rubber company's tire division, in an address before the truck tire maintenance section of the S.A.E. at Pittsburgh, Pa.

Mileage performances varied, Mr. Blake stated, depending on the type of operation and the degree of maintenance in effect. Overloading, high speed driving, and a tendency to maintain excessively high air pressures within the tire resulted in lower mileage.

Without the use of rayon, synthetic truck tires, especially in the larger sizes, would not have been practical under war time driving conditions. Recapping synthetic tires has been generally successful where experienced workmanship and good recapping materials have been employed, Mr. Blake said, and added that it has a definite place in post-war trucking operations.

Entries Soar High In G.M. Competition

An all-time record of registrants for an architectural competition of its type has been made in the \$55,000 competition for automobile dealers' places of business, sponsored by General Motors Corporation. This was stated by Architectural Forum, publication conducting the contest for General Motors. A check of registrants reveals every state in the United States is represented as well as Canada, Hawaii, Alaska and members of the armed forces overseas. The total of registrants has passed 4,300, five months after the contest was first announced, according to M. E. St. Aubin, director of the GM Service Section.

The world-wide requirements of the United Nations today exceed 7,000,000 barrels of crude oil per day, according to the Petroleum Administration for War. Of this, the United States is called upon for 4,850,000 barrels, or 69 per cent; South America 14 per cent; the countries of the Middle East 7 per cent; and Russia 9 per cent.

THE WEATHERHEAD "LINE":



Fittings



Fuel Lines



Dash Controls



Drain Cocks

World's Largest
Manufacturer
of Fittings and
Flexible Hose
Assemblies

The
WEATHERHEAD
COMPANY
Cleveland, Ohio



"—uh—you want to know
if we do body work?"

When writing to advertisers please mention Motor Age



**Take the chance
out of product
selection**

*It's sound merchandising to
feature the **SERCO** line*

*And
here's
why!*

1 PROFITS: Proven money-makers! KI-MO, SERCO, NOXO, REESO, RUSGO and SOLVO... America's finest automotive chemicals... are consistently profitable to both jobber and dealer.

2 QUALITY: Scientifically developed, laboratory-tested... "Guaranteed Satisfactory" on every SERCO label, means efficiency, safety, protection and QUALITY!

3 SATISFACTION: The automotive trade has confidence in SERCO products because they are time-tested, time-and-trouble savers... do the job BEST... build repeat business.

4 REPUTATION: Perfected through 15 years of experience, SERCO products are recognized as best in a highly competitive market. Yes, it's smart merchandizing to feature the reputable SERCO line!

Mechanics and Station men crowded for time will find that KI-MO is a valuable aid for quick, easy radiator and cooling system cleaning. It will do the job while you go about your regular work. You'll find plenty of uses for KI-MO NOW!

WRITE FOR CATALOG PAGES, DESCRIPTIVE LITERATURE, AND SPECIAL SALES INFORMATION



Service Supply Co.

1115 - 7th Street, Denver 4, Colo.



**AVAILABLE
NOW
on priority!**

BUELL MANUFACTURING CO.
2981 COTTAGE GROVE AVE., CHICAGO 16, ILL.



Check the wire on every job

Wirey Joe

AUTOMOTIVE CABLE

manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island

Ford Announces Details On Two New Truck Models

Analysis of the detail improvement made in the line of motor trucks recently announced by Ford Motor Company shows unmistakably that the fleet operators will be given full advantage of the experience gained in arduous military service. The lessons learned under extreme conditions of the war thus are being translated into changes and improvements which should go far to increase the life and serviceability of commercial vehicles.

Ford has announced two lines—the commercial car Model 59C on 114 in. wheelbase; and the 1½-ton Model 59T which is offered in 134 in. and 158 in. wheelbase. The 1½-ton models come with 7.50 x 20 tires with dual wheels at the rear as standard equipment. The two-speed rear axle is optional equipment, and when supplied, it is equipped with 8.25 x 20 tires on dual rear wheels.

Both the commercial car and the 1½-ton models are powered with the familiar Mercury engine, now incorporating some interesting detail changes and improvements. The V8 engine has 3.18 in. bore x 3.75 in. stroke, 239 cu. in. displacement, rated at 100 bhp. at 3800 rpm. The pistons are of aluminum and are fitted with four rings instead of the three ring type formerly used. This provides better oil control and improves oil economy. In addition, the pistons are fitted with heavier wrist pins for increased wear life. As announced some time ago, this engine features the Silvalloy rod bearings developed and produced by Ford.

Several other refinements have been introduced to improve lubrication and oil economy. The oil system pressure has been increased; and the rear main bearing oil seal redesigned. The latter change was made to provide an effective seal under extraordinary operating conditions such as have been encountered on steep grades in military service. Oil bath air cleaners and oil filters are supplied as standard equipment. It is of particular interest to find that the oil pan housing now is of split construction to facilitate clutch service operations.

Military service showed the need for better cooling of the valves. This has been taken care of by increasing the water jacket space around the valves as a permanent feature of the engine. The intake manifold is provided with special fitting for the various attachments requiring vacuum operation. Among these are connections for vacuum power brakes and for two-speed axle shifting. The steel crankshaft pulley, formerly made in two pieces, is now in one unit.

Several detail changes are found in the transmission in the interest of in-

(Continued on page 108)

*"Ask Bill over there if
you want to hear
about real opportunity"*

WILLIAM BRADY, Inc.
De Soto-Plymouth Sales and Service



Ask Bill . . . ask any De Soto-Plymouth dealer . . . "What about your future?" The answer will be something like this:

"I'll have two great cars to sell . . . cars that have come through the war with wonderful performance records. With both De Soto and Plymouth I'll have cars to fit the purses of nearly all new car buyers. Chrysler Corporation engineering is behind my cars. Yes, and *two* national advertising campaigns—De Soto and Plymouth—pushing prospects my way."

Bill told only *part* of the story. For more facts and data on De Soto-Plymouth sales areas available, write to Mr. J. B. Wagstaff, General Sales Manager, De Soto Division, Chrysler Corporation, Detroit, Michigan.

Plus Points for De Soto Dealers

★ **DOUBLE SALES OPPORTUNITY.** Two great cars—De Soto and Plymouth—under one sales agreement.

★ **WIDE MARKET COVERAGE.** Cars to fit the purses of nearly all new car buyers.

★ **HUGE SERVICE MARKET.** Millions of De Soto and Plymouth cars now on the road give tremendous opportunity for service volume.

★ **EXCELLENT PARTS DISTRIBUTION.** Ample supplies promptly available at convenient points.

★ **TWO ADVERTISING CAMPAIGNS.** . . . De Soto and Plymouth.

★ **CHRYSLER CORPORATION ENGINEERING.** Dealers profit by research of an organization famous for automotive "firsts."

★ **WIDER USED CAR RANGE.** Trade-ins from both low- and medium-price fields to offer used car buyers.

★ **EXPERIENCED FIELD STAFF** . . . rendering practical assistance in all phases of dealer operation.

DeSoto

There's a bigger future with



The time is coming *fast* when we'll all be selling again—selling hard and smartly to stay in business and make money.

SELLING WILL BE DIFFERENT

All during the war, marketing experts have been developing new and better ways to sell. That is particularly true in the automotive business.

If you want the advantage of successful planning, plus the freedom to make those plans fit your postwar business, then there is one place to go for "something special"—get in touch with Pennzoil. The plans are laid. And when the time is ripe, we—and you, if you sound your Z—will be ready for postwar conditions.

THE PENNZOIL CO., Executive Offices, OIL CITY, PA.

"Sound your Z"

Ask about the

FOX

**RAPID
BATTERY CHARGER**

**FOX PRODUCTS COMPANY
PHILADELPHIA 41, PA.**



CAMPBELL

Lug-Reinforced
TIRE CHAINS

THE CHAIN WITH THE SAW-TOOTH GRIP
Greater Mileage Greater Safety
INTERNATIONAL CHAIN & MFG. CO., YORK, PA.

Golden Jubilee Slated For Auto Industry

The Golden Jubilee commemorating the first automobile race in America and observing fifty years of progress in the automobile industry will be celebrated during the month of November at the Museum of Science and Industry, Chicago, Ill., according to an announcement by the Museum's president, Major Lenox R. Lohr.

In outlining plans for the event, which will have as its theme the fifty years of development of a vital industry, Major Lohr pointed out the Museum building in Jackson Park was the starting point for the historic first American automobile race, held on Thanksgiving Day in 1895, under the sponsorship of the old *Chicago Times-Herald*.

In addition to the re-run of the race over the original course on Thanksgiving Day, special exhibits and events commemorating half a century's growth of the "horseless carriage" will be open to the public during the month of November in the Museum's main exhibition halls.

Personnel Appointments

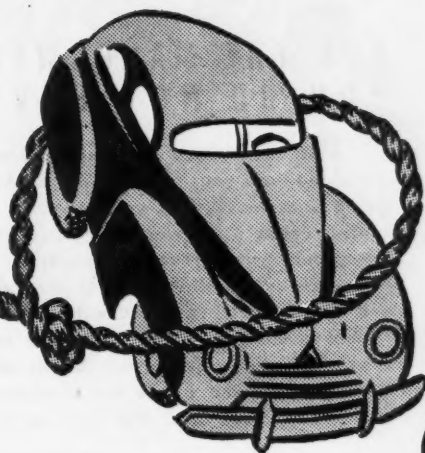
James Robert (Bob) Jones, formerly with Clawson & Balls, has joined the sales force of Moog Industries, Inc. He will be affiliated with Claude Suttles, district-sales manager for the firm's southeastern territory. Moog Industries, Inc., also announced the appointment of A. Bryan Williamson as district sales manager for Indiana and Ohio.

E. E. (Gene) Harrison has been named Seattle regional manager for De Soto Motor Corp., succeeding Arnold Reading, who resigned to enter private business as a De Soto-Plymouth dealer. Other appointments announced by De Soto were as follows: J. E. Paddock, Boston regional office; N. B. Bush, Memphis region; N. B. Spalding, Syracuse; and C. T. Leary, Philadelphia.

The Crescent Co., Inc., manufacturers of Wiry Joe wire and cable, is now represented in the Northwest area by Walter H. Grebe Co. it was announced.

Anti-corrosive Cement

An anti-corrosive cement for permanently attaching felt, jute or various types of pads to interiors of steel bodies for eliminating metallic drumming and for insulation purposes has been developed by The Dolphin Paint & Varnish Co., 914 Champlain St., Toledo 3, Ohio. It will be marketed as No. 2135 Dolfinite Black Silencing Cement. Further details on No. 2135 Dolfinite Black Silencing Cement and a copy of the new Dolfinite catalog of automotive sealers, compounds and cements, may be had by writing the manufacturer.

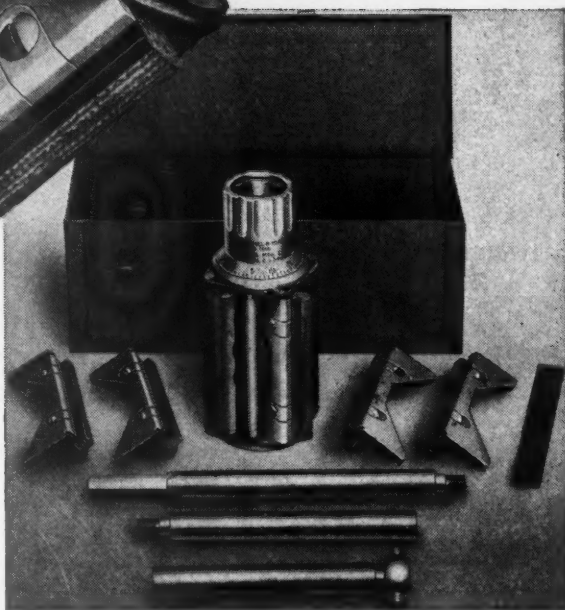


BE READY FOR THE Big "ROUND-UP"

Millions of car and truck cylinders will need "rounding-up" with this HALL Model H Hone this year if those engines are going to remain in service for the duration and beyond. This faster, lighter weight, wider range Hone with its greater speed and accuracy, finer finish and quick, easy expansion will help you turn out better jobs, faster and more profitably. Use it wet or dry as you prefer; round-up any cylinder from cast iron to inserted steel sleeves. Do it better, faster, more economically with this Model H HALL Hone.

**Model
H**
World's
Fastest
Finest-Finish
**CYLINDER
HONE**

**USE
IT
WET
OR
DRY**



HALL Model H Cylinder Hone with Micrometer Adjustment comes complete in metal box as shown at right. Handles range of 2.6" to 5 1/2". Special oversize Stone-Carriers are available to increase range to 6 1/16". Honing Stand and Vacuum System also available. Long lived Honing Stones in a variety of grits are reasonably priced and readily available.

Order the HALL
Model H Cylinder
Hone from your
Jobber today.

THE HALL MANUFACTURING CO., TOLEDO 7, OHIO

HALL

Write the factory
about HALL Valve
Servicing Equip-
ment today.

SUBSTITUTE THE POWER OF
Compressed Air
FOR THE MANPOWER
YOU DO NOT HAVE

USE compressed air to speed your work and ease your labor. A Wayne Air Compressor never lets you down. It is always ready . . . never failing . . . because built with greater precision and ruggedness. It's all Wayne engineered and Wayne built. . . sold with a Performance Guarantee that is backed by Wayne's Nationwide Service Organization. Compressed air is the cheapest "helper" you can hire. Use more of it!

THE WAYNE PUMP COMPANY
Fort Wayne 4, Indiana

Write for copy of new Air Compressor catalog.

As shown here from
M. P., 1.4
to 40 c. f. m.

WAYNE AIR COMPRESSORS
Sold With a Performance Guarantee
GASOLINE PUMPS • CAR WASHERS • AIR SCALES • REELS • LIFTS

Ford Announces

(Continued from page 104)

creased service life and simplification of maintenance operations. The most important is the application of thrust washers at the ends of transmission cluster gear.

The commercial car model now is provided with lube fittings at the universal joint as standard equipment. Formerly these were fitted only on the 1½-ton jobs. This model also has new wheels with 4½ in. wide rims to accommodate the standard 6.50x16" tire equipment. The steering gear mounting also has been improved on this model. The radiators are equipped with a pressure type filler cap which reduces the loss of engine coolant.

Synthetic Tire Cost Lowered, OPA States

SYNTHETIC rubber tires for passenger cars and motorcycles will cost civilian buyers from 45 cents to \$2.20 less as of May 1, when lower retail ceiling prices were established, Price Administrator Chester Bowles reported. On the same date, retail ceiling prices on the larger sized truck and bus tires were cut approximately 7½ per cent.

The May 1 action will reduce tire prices at retail to the lowest levels since early 1942, Mr. Bowles said.

Mr. Bowles estimated that, at the present rate of buying, the reductions OPA is putting into effect will save tire users about \$23,000,000 a year. Seventeen million dollars of this saving will come from the lower prices on passenger car and motorcycle tires. The rest of the 23 million-dollar saving—six million—will result from the truck and bus tire price reductions.

Too much oil on an automobile's electrical apparatus, such as the generator, starter and distributor, may work into the wrong places and cause trouble.—General Motors User's Guide.

PALMGREN

No. 250 MILLING FIXTURE VISE



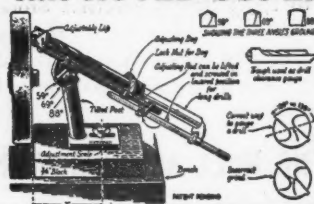
Every garage, dealer, service shop should have this fixture. Fits any 8"-9"-10" South Bend, Atlas, Craftsman, Sheldon or other lathes of similar sizes. Graduated vertical feed screw and 360° graduation for vertical angle adjustments. Easily mounts on cross slide with T-slot bolt. Equipped with PALMGREN VISE 2½" Jaws, plain and grooved jaw for holding round pieces.

DO MILLING ON YOUR LATHE

No shop fixture is more important. Numerous milling operations can be done on your lathe, and it soon pays for itself in repairing parts or making new parts. When ordering give make also sizes of lathe and T-slot on cross slide. Price \$24.75.

Order Direct or thru Jobber! Write for Circular No. 348
CHICAGO TOOL AND ENGINEERING CO.
8351 South Chicago Ave. Chicago 17, Ill.

IMPROVED SUPER DRILL GRINDER



ONLY \$2.95 COMPLETE!

Grinds round shank drill points from No. 42 to 1½" diameter. Grinds old drills like new. Grinds short, medium and long twist drills up to 11". The grinder that gives a rounded point.

MONEY BACK GUARANTEE!
GRIND YOUR DRILLS LIKE FACTORY IN 25 SECONDS!
Get a perfect center and clearance in three different point angles—59°—69°—and 88°. No machine shop or work shop should be without the super drill grinder.

Ask your jobber to supply—if he cannot serve you, mail your check or money order for only \$2.95, with your printed address—the SUPER GRINDER will come to you by return mail, postage paid.

The ideal tool for the hobbyist!
Available now—
Buy it today.

A. D. MCBURNEY
939 WEST 6TH STREET, DEPT. MA-1
LOS ANGELES 14, CALIFORNIA

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The
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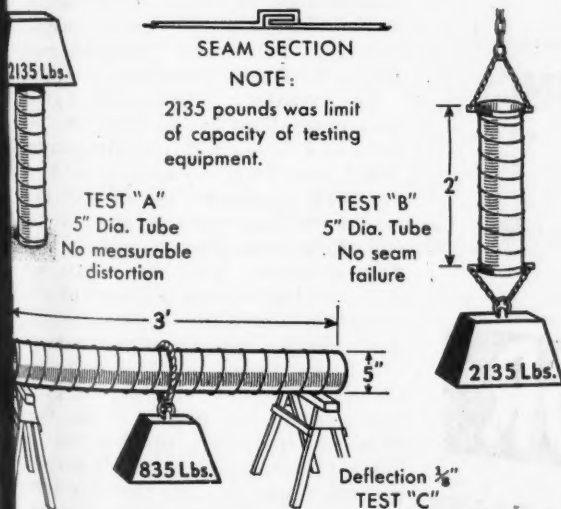
SPRAL CONSTRUCTION **OUTSIDE**

PLUS . . .
SELF-CLEANING SCOOP ACTION
EQUALS . . .



Super Muffler Performance

TESTS PROVE STRENGTH OF PRATT SPIRAL CONSTRUCTION



Pratt Spiral Mufflers are approved by Underwriters' Laboratories, Inc.

Exclusive features which mean ready consumer acceptance are your assurance of faster turnover and greater profits when you sell the Pratt Line of Spiral-Built Mufflers. They're engineered *outside* and *inside* to deliver super performance and long life.

Outside—Pratt Spiral Muffler shells are fabricated from cold rolled steel, reinforced from end to end by continuous, inter-locked, 4-ply spiral ribs. This patented construction produces shells of great strength and rigidity and insures long, trouble-free service.

Inside—Only Pratt Mufflers bring you exclusive, patented, Self-Cleaning Scoops instead of conventional perforations of other mufflers. Pratt Scoops whirl exhaust gases more effectively into silencing chambers giving smoother, quieter operation. Because Scoop Action is self-cleaning, the scoops never clog. Back pressure remains at a minimum resulting in continued, efficient engine performance.

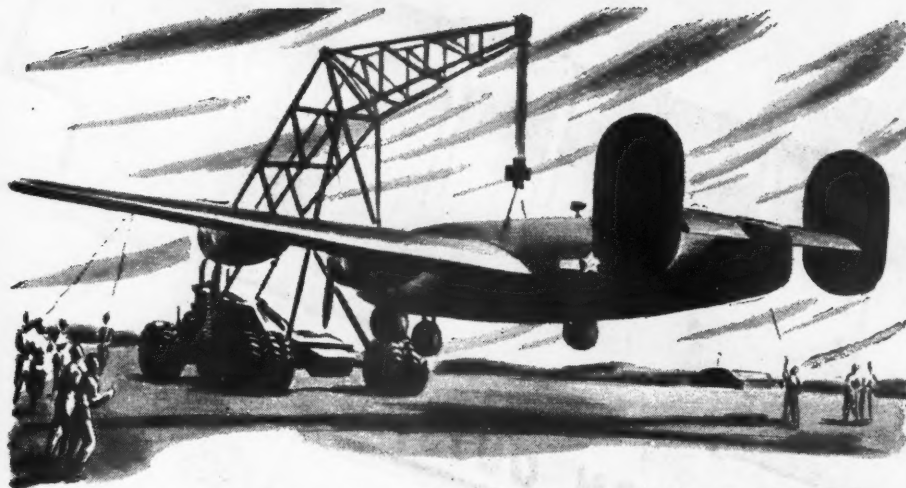
PRATT INDUSTRIES INC., FRANKFORT, N. Y.
In Canada: **PRATT CHUCK COMPANY, Ltd., Toronto, Ont.**

Pratt Replacement Mufflers are sold only through jobbers.

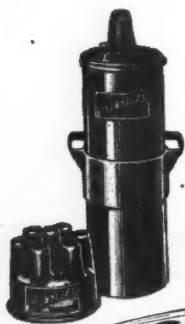
*Join the Profit Parade with Pratt Spiral Mufflers
and watch your Muffler Sales Pyramid.*

PRATT Spiral MUFFLERS

DIFFERENT . . . BETTER . . . FASTER SELLING



*there's always
one that's tops!*



BLUE STREAK
IGNITION PARTS



STANDARD MOTOR PRODUCTS, INC.

37-36 NORTHERN BOULEVARD

LONG ISLAND CITY, N.Y.



This is on the record! The War Department owns a giant, rubber-tired crane that can scoop up a 30-ton plane or a railway flat car, loaded down with cement bags, with equal ease. That's lift! It's the kind of lift Blue Streak ignition parts give an ageing motor to help it deliver more mileage.

In spite of wartime difficulties, Blue Streak still pre-tests materials and workmanship... still adheres to the standards that have made it tops with mechanics everywhere: peak performance... longer life... rugged service.



36,000 SERVICE STATIONS
COUNT ON BLUE STREAK

Such acceptance, and it's growing, is proof that motor experts don't count pennies when they need a better product.

Willow Run Plant Disposal Is Problem

Ford Motor Co. has no plans for postwar use of the \$100 million Willow Run bomber plant which it has operated for the Army Air Force during the war, and the military has decided that the huge facility has fulfilled its wartime purpose, leaving an expensive and important question mark over the ultimate disposal of the huge installation.

Henry Ford, II, executive vice president of the company, told employees recently that his company "is not in the least reluctant to see this plant or any plant discontinue making implements of warfare—once the war need ceases." He added that Willow Run is a war plant constructed to meet a war need, just as a carrier, battleship, or a bomber, and if it has hastened the end of the war, it is as expendable as a battleship and no more expensive.

Mr. Ford also gave a hint that his company intends to maintain employment levels as high as possible by telling the bomber plant workers that Ford expects to be able to offer them jobs somewhere in the Detroit area just as soon as the government gives the necessary go-ahead on civilian production. The bomber plant is scheduled to wind up its operations by Aug. 1, but some reports indicate that the end may come sooner than that.

Temporary Gas Reserve Effected Says PAW

Temporary build-up of civilian gasoline stocks along the Atlantic seaboard has been effected to meet the normally heavy seasonal demand at the time of the year despite an extremely tight transportation situation, Deputy Petroleum Administrator Ralph K. Davies reported.

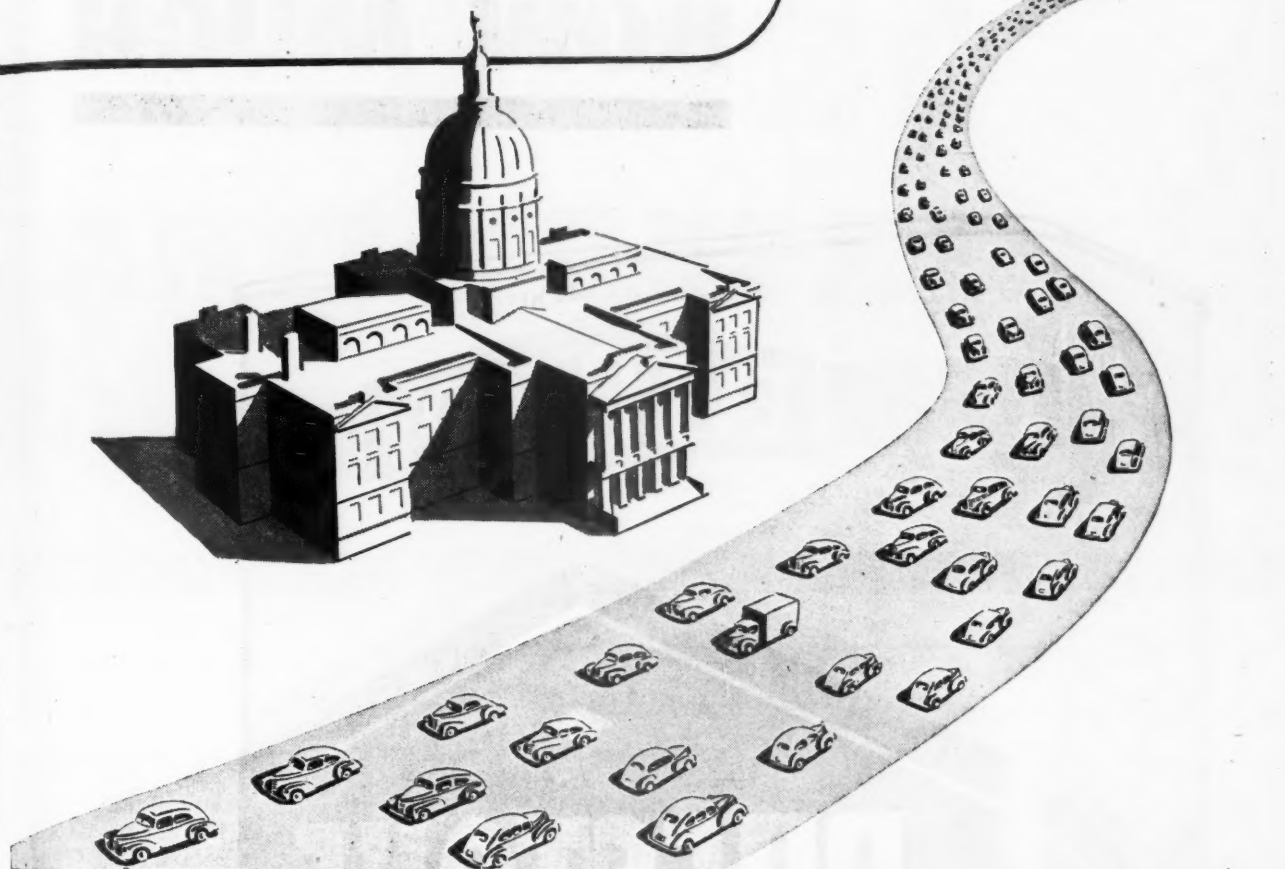
The inventory of this grade of gasoline in the East Coast area (District I of the Petroleum Administration for War), was 8,677,000 barrels on April 21, 1945, approximately 680,000 barrels more than were in stock at the end of the corresponding week in 1944. This additional stock represents less than one half of one per cent of consumption during the last year.

Mr. Davies emphasized this increase had been planned by PAW to assure adequate supplies for the peak gasoline consumption period in the face of a transportation problem that is likely to become increasingly serious for some time. Tankers that had been available for shipment of civilian petroleum products into East Coast ports have been released for military service, and there is a growing drain on rail transportation to supply military and essential civilian demand on the West Coast and in other parts of the country.

SEALED BEAM CONVERSION KITS
FOG LAMPS
STOP LIGHTS
MARKER LIGHTS
TURN SIGNALS
FLARES
REFLECTORS
CLEARANCE LIGHTS
ARROW SAFETY DEVICE CO.
MOUNT HOLLY, N. J.

BALDOR
ST. LOUIS, MO.
BATTERY CHARGERS
BATTERY TESTERS
SHOP GRINDERS
ELECTRIC MOTORS

In Atlanta—



76% of All Cars are Paint Job Prospects!

Surveys indicate that a big percentage of cars need paint in your community, too

IT'S hard to believe that 3 out of 4 cars in Georgia's capital city need paint protection today. But that's a fact based on a recent survey. And, according to other surveys, it is equally true in other sections.

What a profitable market for your paint shop equipment in the years ahead!

Right now, the important job of keeping essential cars in running order may be taking all your available manpower. But when the shortage of

help eases, you will want your share of this huge volume of business. So, lay the groundwork now.

Have your DeVilbiss distributor check the operation of your paint shop equipment. A few replacement parts may be all it needs to put it in A-1 condition. And if new equipment is urgently required, he will do everything possible to get it for you.

THE DEVILBISS COMPANY • TOLEDO 1, OHIO
Canadian Plant: WINDSOR, ONTARIO

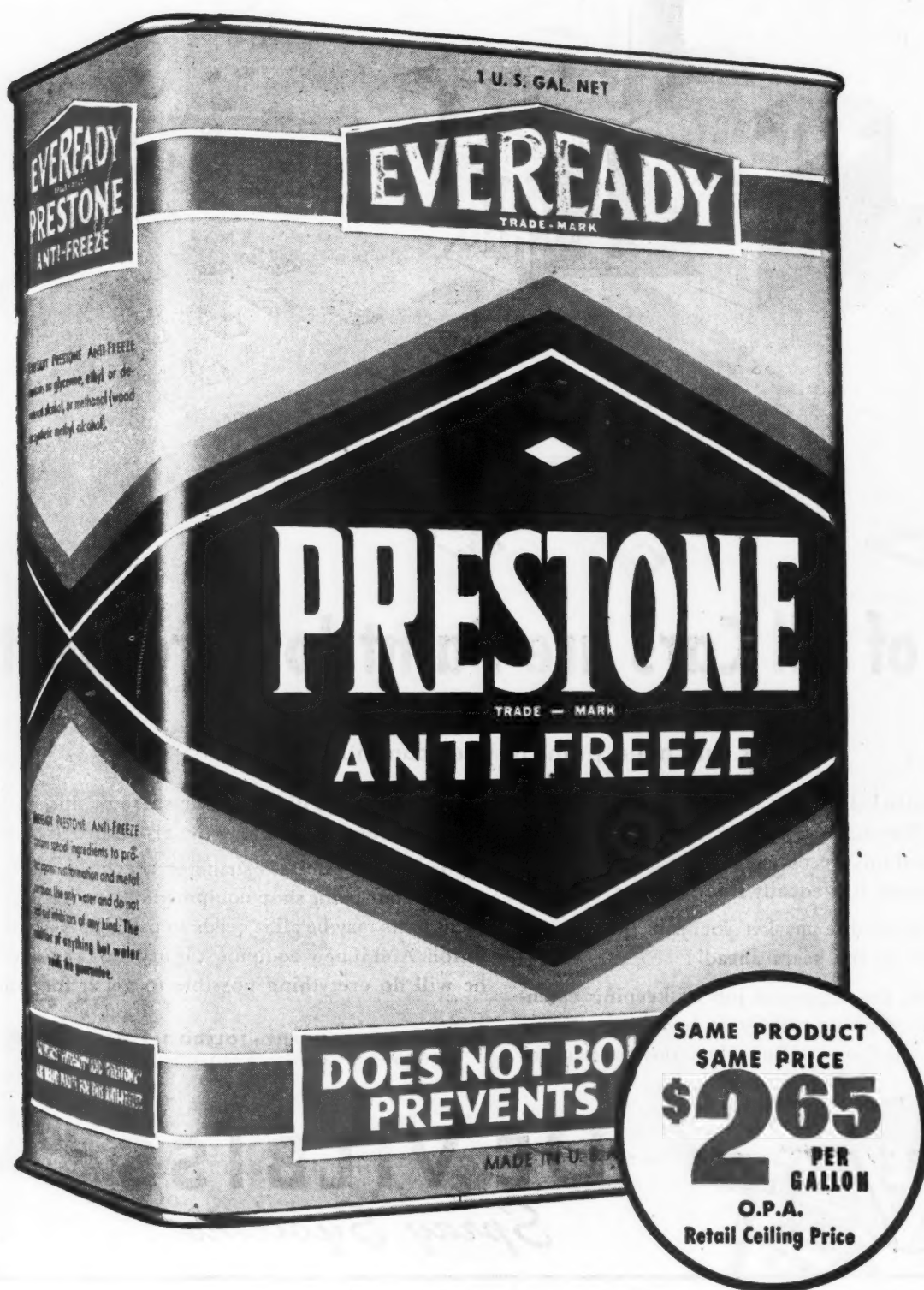


DE VILBISS

Spray Systems

SPRAY EQUIPMENT • EXHAUST SYSTEMS • AIR COMPRESSORS • HOSE & CONNECTIONS

HOW MUCH



"PRESTONE"

ANTI-FREEZE


FOR YOU THIS YEAR?

THE BEST ESTIMATE, today, is that "Prestone" anti-freeze will still be scarce next winter.

Millions of gallons of dependable one-shot anti-freeze will be needed by the Armed Forces to protect military vehicles against freeze-ups.

But *some* civilians in *every* community here at home will be able to buy "Prestone" anti-freeze next winter . . . the anti-freeze that won't evaporate, won't foam off, or boil away.

Meanwhile, "Prestone" anti-freeze advertising in national magazines and farm papers will explain to consumers the official allocation plan for *all* anti-freezes . . . so your customers won't hold *you* responsible if they can't get "Prestone" brand anti-freeze.



HERE'S HOW ALL ANTI-FREEZES WILL BE DISTRIBUTED!

With the cooperation of the Anti-Freeze Industry Advisory Committee, the War Production Board has set up a state allocation plan for the distribution of all anti-freezes, both "permanent" and volatile. This plan is intended to assure motorists of *some* kind of anti-freeze protection. Some "Prestone" brand anti-freeze will be available in all communities.

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

General Offices: 30 East 42nd Street, New York 17, N. Y.
Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

The words "Eveready" and "Prestone" are registered trade-marks of National Carbon Company, Inc.

PRESTONE ANTI-FREEZE

TRADE MARK

ONE SHOT LASTS ALL WINTER

You're Safe and You Know it!



Millions of cars are

**HELL BENT
FOR TROUBLE**

Yes, there's plenty of trouble ahead for every car that's not receiving regular cooling system service. Many car owners do not know that a neglected cooling system can cause serious engine damage. But you know it, and you also know that the older the car, the more rapid and more serious the damage.

So put a real push behind cooling system compounds; that's one of the most important things you can do to

help keep millions of cars on the road. Do your part to see that every cooling system is cleaned and protected at least twice a year.

WARNER RADIATOR CLEANER quickly removes rust, scale and oil-muck—opens passages and frees the engine from dangerous hot-spots. Overheating usually disappears with the first cleaning.

WARNER COOLING SYSTEM PROTECTOR keeps the cooling system clean—prevents rust—protects metals against harmful chemicals found in most water.

WARNER-PATTERSON COMPANY
920 S. MICHIGAN AVENUE, CHICAGO 5, ILL.

WARNER SERVICE CLEANER
...extra strength for trucks
...heavy motors or badly
neglected cars. Fast, non-
poisonous.

WARNER LIQUID SOLDER
Repairs leaks in any part
of cooling system quickly,
without mechanical aid.



WARNER

**COOLING SYSTEM
COMPOUNDS**

WARNER COOLING
SYSTEM COMPOUNDS
are advertised regu-
larly in Collier's.

Copyright 1946, Warner-Patterson Co.

STANDARD OF PROTECTION

VITAL TO—

- Low Mileage Costs
- Easy Operation
- Maintained Schedules



SKF

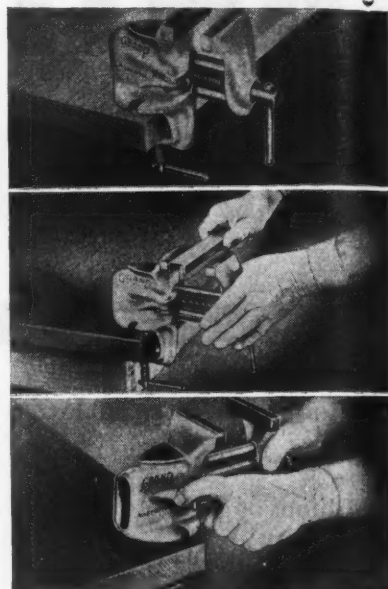
BALL AND ROLLER BEARINGS



★ Service men and garage men who have watched ARO through the years—and have used ARO—know that the ARO trademark on any item of equipment marks it as a leader!
THE ARO EQUIPMENT CORP., BRYAN, O.

New Machinist's Vise

Grand Specialties Co., Grand Ave. at Troy, Chicago 22, Ill., announces a completely new "quick-action" Machinist's vise. Known as the Grand 3-inch QUIKCET Alloy-Steel Machinist's Vise, it is manually operated, but eliminates running in or out the screw to close or open the vise. It is claimed that this new speed vise can be set and closed in a jiffy by simply pushing on body of the free jaw, which slides in swiftly on ratchet screw and



two precision guide rods and tightens with a turn of the handle. The vise is equipped with a trigger release paul with $\frac{3}{4}$ inch of thread which holds the hardened screw under spring tension. Vise is said to open instantly to full 3 inches by pressure of thumb or finger on trigger release after tension has been eased by single turn of the loose-proof handle. The Quikcet vise is then said to be ready, without further adjustment, for instant closing on any other work. It is priced at \$7.95 (slightly higher in West Coast States and Canada).

Steam Cleaning Compound

A new heavy duty steam cleaning compound, marketed under the name of Steam-Off, has been developed by Turco Products, Inc., 6135 South Central Ave., Los Angeles 1, Calif. It is claimed to be particularly effective in the removal of the heaviest, most stubborn grease and dirt from iron and steel surfaces, concrete, brick, and structural materials, gasoline and diesel engines, steam shovels, tractors, locomotives, and road building machinery.

It was designed to function without the loss of cleaning power in the hardest water, and to prevent the depositing of hard water scale, which clogs coils and other vital parts of steam cleaning machinery.

Keep America's cars rolling smoothly— RESTORE THAT "Delco Ride"

Delco hydraulic shock absorbers are original equipment on two out of every three cars on the road. Now that these cars are seven years old, on the average, millions of them are in immediate need of shock service.

That's your tip to check the shock absorbers on every car that comes in for repairs or adjustments . . . and restore that gentle "Delco Ride." Delco shock absorber service will reduce tire wear, help prevent spring breakage, give better traction and make cars safer and more comfortable for your customers.

When shocks are damaged beyond servicing, the Delco Shock Absorber Exchange Plan enables you to replace with new Delcos. Each new Delco carries the original-equipment guarantee, and a liberal exchange plan makes the cost reasonable for your customer.

Your United Motors distributor will furnish you with full details concerning the Delco Shock Absorber Exchange Plan. Put it to work for you.



To keep shock absorbers at peak efficiency, refill with reliable Delco shock absorber fluid when fresh fluid is required.

BUY EXTRA BONDS

DELCO HYDRAULIC SHOCK ABSORBERS

Delco Products Division, General Motors Corporation, Dayton, Ohio



DELCO SHOCK ABSORBERS
A UNITED MOTORS LINE

Delco original-equipment service parts and products are sold through independent distributors served by 20 United Motors warehouses.

SCHRADER CONSUMER ADS HELP YOU SELL YOUR CUSTOMERS!

Schrader advertisements, like the one below, now appearing in 4 of America's leading magazines—*Cap-per's Farmer*, *Collier's*, *Country Gentleman* and *The Saturday Evening Post*, are telling your customers to

**DO YOU WANT
5 AIRTIGHT
TIRES?**



**START WITH
AIRTIGHT
VALVES**

Schrader Caps are again available. —get a complete set today at your dealer's in the familiar red, white and blue box.

This Seals the Air!



Set of 5—25c U.S.A.

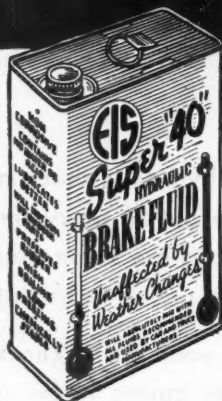
get a set today at your dealer's.

Be sure their tire valves are sealed with Schrader airtight Caps. Make sure your stock is complete. Order today.

Always "recap" tire valves too

A. SCHRADER'S SON
Division of Scovill Manufacturing Company,
Incorporated,
BROOKLYN 17, NEW YORK

EIS Super "40" The BRAKE FLUID that has Everything



EIS BRAKE FLUID—

is non-corrosive—contains no water or acid—
preserves rubber; will not gum up rubber parts—
has an extremely low freezing point—
has a very high boiling point—
is chemically stable—doesn't lose its original efficiency—
lubricates better—
mixes with all fluids recommended and used by car and truck manufacturers.

ARE YOU sure the brake fluid you are using has ALL of the features a brake fluid ought to have? If you are not, the answer is EIS Super "40", the brake fluid that has Everything.

Higher in quality today than ever before during the twelve years it has been on the market.

Give your customers EIS Super "40" and you give them the tops in brake fluid service—yet Super "40" costs no more.

Write for literature
on the EIS
Complete Line of
Brake Parts
and Tools.

EIS MANUFACTURING CO., MIDDLETOWN, CONN.

Valve Reseating Tool Set With Inserted Blades

These precision-made cutters have seven blades irregularly spaced and set at the exact angle. They produce a smooth, even surface, and the blades are keen enough to cut through burnt or glazed steel. The complete set, packed in metal box, includes 7 Cutters, sizes 1½ in. 30°, 1½ in. 45°, 1½ in. 60°, 1¼ in. 30°, 2 in. 30°, 2 in. 45° and 2 in. 60°. Also included is one Ford V-8 Pilot Bushing and 18 Pilots and Handle. Pilot sizes—5/16 in., 5/16 in. + .001, 21/64 in., 21/64 in. + .001, 11/32 in., 11/32 in. + .001, 11/32 in. + .002, 11/32 in. + .003, 11/32 in. + .004, ¾ in., ¾ in. + .001, ¾ in. + .002, ¾ in. + .003, ¾ in. + .004, 25/64 in., 25/64 in. + .001, 7-16 in., and 19/32 in. A priority rating of AA-5 or higher is required for the purchase of this set. Manufactured by New Britain Machine Co., 140 Chestnut St., New Britain, Conn.

An armored battalion requires 17,000 gallons of gasoline to move 100 miles under ideal conditions. The requirements of an armored division are 17,000 gallons multiplied by the number of armored battalions in the division, plus the requirements for the artillery, engineers, infantry, and other units in the division.

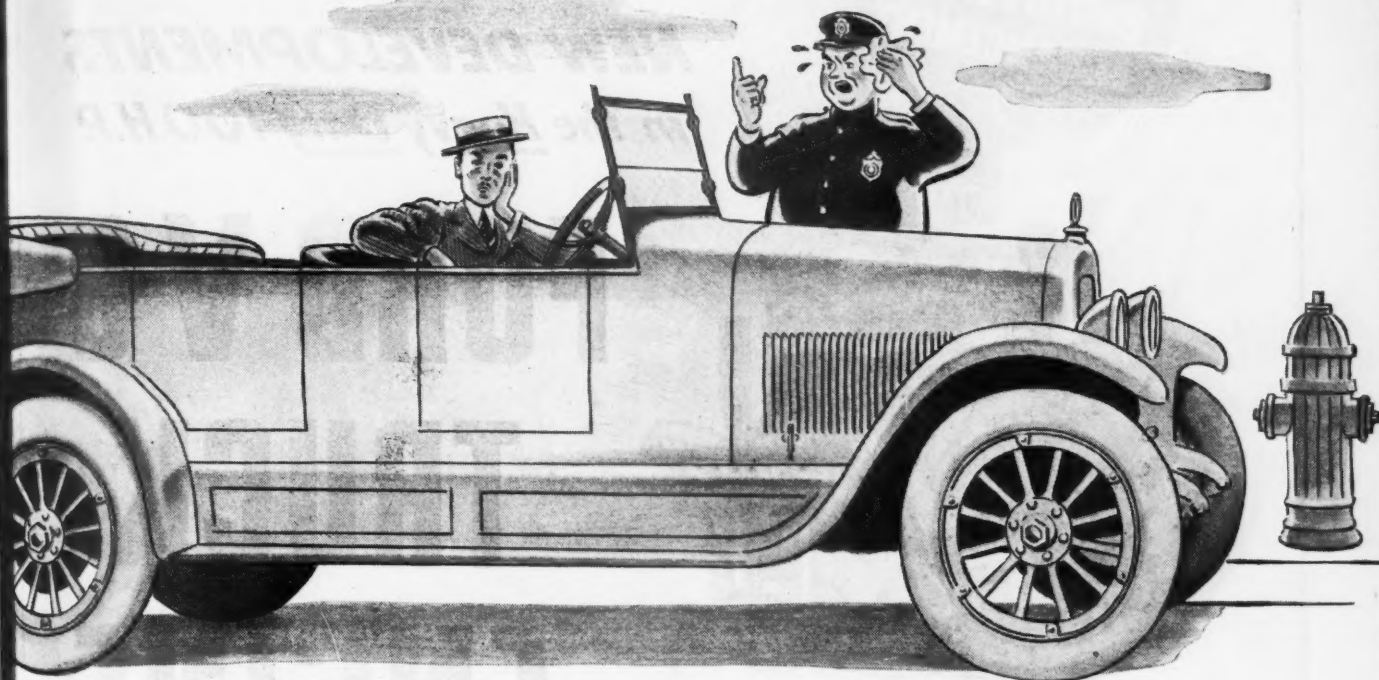
Tire Dealers Required To Keep Records

TIGHTENING of tire dealers' record-keeping requirements and several other changes in the tire rationing program, all designed to protect the nation's small supply of tires, were announced by the Office of Price Administration.

Tire dealers will be required, beginning June 1, 1945, to maintain current records and to take a monthly inventory to establish accountability for tires and tire certificates. Coupled with the recent cancellation of tire certificates dated before December 1, 1944, and a requirement that tire manufacturers turn in certificates monthly to OPA verification centers for screening, today's action completes a comprehensive program to stop illegal tire sales and transfers.

The new requirements will help OPA enforcement agents uncover illegal transfer of tires, the agency said. Recently, OPA has experienced great difficulty in obtaining records which show the number of tires and replenishment certificates some dealers have on hand because it has been forced to depend upon dealers' inventories as of December, 1941. In many cases, these records are no longer available.

(Post-War Model, 1918 Variety)



THE JORDAN SILHOUETTE BROUGHAM BOASTED A BUFFALO MUFFLER, TOO!

● Back in the "jazz age" that followed World War I, no car rated higher with flaming youth—and no hot spot was really complete without a rakish Jordan parked in front. And no Jordan was complete without its Buffalo Muffler—natural choice for a car whose price included such appointments as top, windshield, speedometer, ammeter, clock, tire pump and electric horn!

The next post-war era won't be graced with a Jordan—but it will find Buffalo Mufflers in the same position of leadership they have enjoyed since 1913. The years that have passed have seen

Buffalo make great strides in acoustic engineering—in rugged construction—and accuracy of fit.

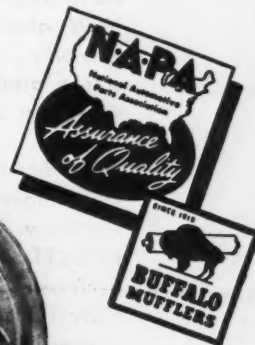
Result: More and more repairmen depend on Buffalo for the *right* muffler for the individual car—the muffler that will *stop that noise* effectively, and give the car owner complete satisfaction and protection over a long period of service.

It's easy to give *your* customers the benefit of Buffalo experience, for Buffalo Mufflers are readily available through your NAPA Jobber. He's a good man to know.

BUFFALO PRESSED STEEL COMPANY • YOUNGSTOWN, OHIO

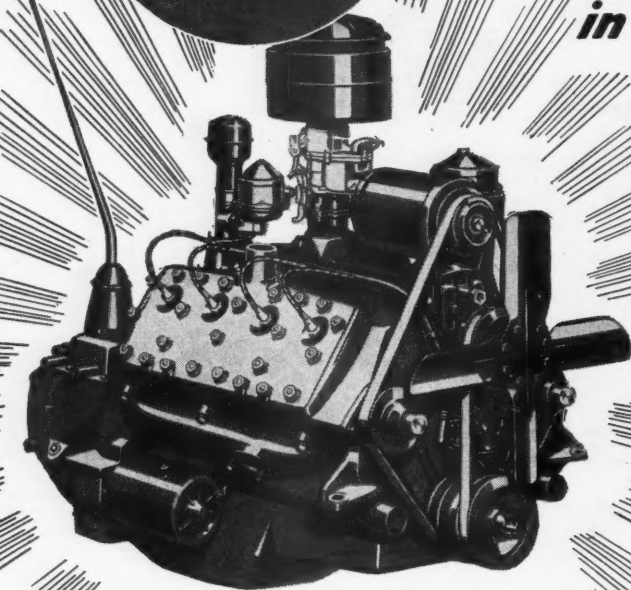
Also manufacturers of Buffalo Oil Filters and Kralin-Activated Replacement Elements for All Popular Filters. Sold in Canada under the brand name "Kralinator."

Buffalo MUFFLERS



● A complete line of mufflers including straight-through, reverse-flow, shell-type, round and oval designs.

**AN
IMPORTANT
ENGINEERING
ADVANCEMENT**



**Ford Announces
NEW DEVELOPMENTS
in the Heavy Duty 100 H.P.**

FORD V-8 TRUCK ENGINE

Here's Good News

FOR TRUCK OPERATORS

The Model 59 engine is now offered as original equipment only. It will eventually be made available as a service replacement in Ford Trucks and Commercial units already on the road.

Here are some of the important improvements in this engine:

NEW long-life Tri-Alloy connecting rod bearings . . . **NEW** aluminum alloy pistons with four rings for oil economy . . . **NEW** larger capacity oil pump with more screen area for improved lubrication . . . **NEW** crankshaft rear bearing oil seal . . . **NEW** rust-proofed valve springs . . . **IMPROVED** cooling of valve seats . . . **NEW** flat-type waterproof distributor with full automatic advance and vacuum control . . . **NEW** high efficiency fan . . . **IMPROVED** carburetion . . . **IMPROVED** intake manifold for easy vacuum pipe connections . . . **SIMPLIFIED** design provides easier accessibility for service . . . clutch can be replaced without removing oil pan . . . more parts are interchangeable, reducing the number of service items required.

IT'S HERE—the first of wartime truck engineering developments by Ford to be made available to civilian operators.

An improved Heavy-Duty, 100 H.P. V-8 Engine now powers Ford Trucks and Commercial units which are in limited production for civilian priority holders.

This great power plant is the Model 59. You'll be hearing a lot about its fine qualities. It includes many of the Ford Truck engineering advancements made in response to military needs which are proving valuable in civilian trucking.

These improvements, affecting virtually every operating part of the engine, raise Ford Truck engine performance to new high levels of stamina, economy and efficiency—with new and important *service* benefits of interest to every dealer, service man and truck owner.

Read about them in the text at the left.

FORD MOTOR COMPANY



A General Motors Product



A United Motors Line Available Everywhere
Through United Motors Service Distributors

Original Equipment Quality

Every segment of Inlite Brake Lining is engineered and made to meet the standard of original equipment specifications. Every segment has the same uniformity of structure and the same long wear factor.

Inlite goes on faster, thereby releasing more quickly, vehicles immobilized for brake lining installation. And in addition to shortening the time of

original installation, Inlite comes into normal operation at once, so eliminating time-wasting readjustment call-backs.

Depend on double time-saving Inlite to streamline your brake lining installation and give positive pedal pressure that's just right for both men and women drivers.

INLAND MANUFACTURING DIVISION
General Motors Corporation Dayton, Ohio



WHAT INLAND IS MAKING FOR VICTORY

Inland Products for Victory include Carbines, Tank Tracks, Gun Sights, Helmet Liners, Extinguisher Horns, and Rubber, Synthetic Rubber and Metal Parts for Tanks, Aircraft, Submarine Chasers, Torpedo Boats, Artillery Lighters and Landing Craft.

**KEEP ON BUYING
WAR BONDS**



HELP KEEP CARS FIT TO THE FINISH WITH

Flare

IT MEANS EXTRA PROFITS FOR YOU!

You, too, can get your share of extra profits! Recommend FLARE Waxide for a perfect body cleaning, waxing and polishing job in one easy operation. Ask this simple question: "HAVE YOU GOT 'BUBBLE TROUBLE' IN YOUR BRAKES?" Then recommend FLARE Hydraulic Brake Fluid. Take a look at the radiator and recommend FLARE chemicals for the cooling system. FLARE gives you *best quality* products . . . in a *complete* line . . . uniformly packaged and labeled . . . plus *complete* point-of-purchase selling helps.



45 MILLION SALES MESSAGES FOR Flare IN '45!

. . . in the Saturday Evening Post, Collier's, and Popular Mechanics. This advertising helps you sell!

FREE!

Be sure to get your copy of the helpful, 12-page "Flare AUTOMOTIVE CHEMICAL GUIDE"

ORDER **Flare** DEAL NO. 1995 TODAY!

It means 47½% **CLEAR PROFIT** for you! Flare Deal No. 1995 costs you only \$19.95 . . . resale value, \$37.98 . . . 47½% **Profit!**

Includes 6 fast-selling Flare items . . .



* **12 PINTS HYDRAULIC BRAKE FLUID** . . . blends perfectly with other first quality fluids. Operates at 50° F. below zero or 180° F. above.



* **12 PINTS WAXIDE** . . . contains hard carnauba wax. Cleans . . . waxes . . . polishes in one operation!



* **12 PINTS WHITE TIRE PAINT** . . . covers in one coat . . . keeps white sidewalls new looking!



* **6 HALF-PINTS WHITE TIRE PAINT** [described above]



* **6 HALF-PINTS "FLARE OIL 'A'"** . . . contains colloidal graphite . . . lubricates valve stems, seats and entire combustion chamber. Removes carbon and engine varnish.



* **6 PINTS POLISH AND CLEANER** . . . removes chalked pigment, road film and scum. Restores original finish.

ASK YOUR Flare WHOLESALER . . . OR WRITE DIRECT TO THE BELL CO. TODAY!

FOR CAR BEAUTY AND CARE USE... Flare



THE BELL CO., INC.

ESTABLISHED 1920

411-15 NO. WOLCOTT • CHICAGO 22, ILL.



The BATTLE FOR AMERICA IS ON!

**"You'll Get the Kind of Postwar America You
Want ONLY if You Start Fighting for It NOW!"**



SAYS

Bob Bowes

● Will we have an America with a new and higher standard of living insured by full employment and free play of American Enterprise? We will—only if we are able to make and **SELL** more goods to more people than ever attempted before. That's certain!

Making the goods will be easy... but **SELLING** them will require real fighting by men **WHO KNOW HOW TO FIGHT**. There, we believe, is the answer to the problem of the returning veteran... and America's greatest **OPPORTUNITY**. What we do with it is strictly up to US.

The **BOWES PLAN** Offers Opportunities for **RETURNED VETERANS**

We have set up a plan based on the premise that one successful salesman can make dozens of jobs on the

production line... that a high level of employment is not only possible, but **ESSENTIAL** to a Postwar America of high living standards and freedom of opportunity for all.

We will train a number of selected veterans in **BASIC SELLING**. Many will find jobs in our own expanded organization. Some will find their opportunity in selling for others. Those best fitted will be trained to engage in a business of their own.

This plan offers the returned veteran opportunity for a secure future of his own making... and channels his known fighting capabilities where they will do the most for him—and for America.

*If you are an employer, big business or little business, you can help win this fight. Write for details of the **BOWES PLAN** for returned veterans.*

BOWES



Dependable

TIRE SAVING SYSTEM

BOWES "SEAL FAST" CORPORATION, INDIANAPOLIS 7, INDIANA



STAR GAZING won't do

IF YOU are *thinking* about going into the automobile business, — perhaps you should *do* something about it.

If you are in the business and considering a change in connection, — examine the facts, — and then take intelligent action.

The Dodge organization is over thirty years old, — with more strength and success to show for its history than ever before.

Its dealer organization is healthy and powerful; its products in high public esteem; its war production record unique.

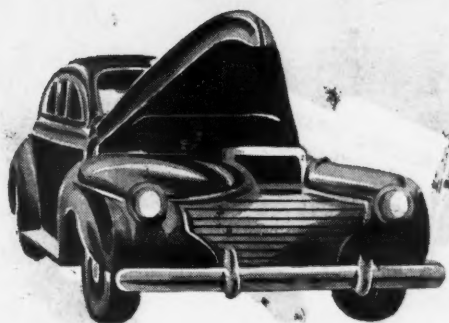
The Dodge dealer franchise embraces two excellent cars, and a complete line of *job-rated* trucks, — all under a single factory-dealer agreement.

It is a history of continuous and solid success, shared by dealer and factory alike.

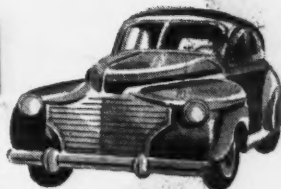
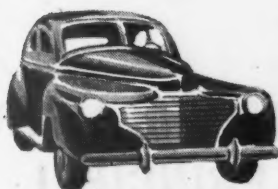
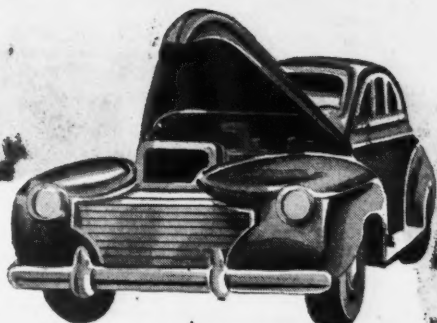
Yes, you *might* do something about it, and we might be able to help.

DODGE • PLYMOUTH • DODGE Job-Rated TRUCKS

DODGE—DIVISION OF CHRYSLER CORPORATION, 7900 JOS. CAMPAU, DETROIT 11, MICH.



**HALF THE CARS ON
THE ROAD TODAY
HAVE NO OIL FILTERS**



**OF THE CARS WHICH DO HAVE
FILTERS - 50% NEED NEW
REPLACEMENT CARTRIDGES**

**SO 3 OUT OF EVERY 4
CARS NOW ON THE ROAD ARE
CUSTOMERS FOR FRAM DEALERS!**



Here's Your Market for FRAM Sales and Profits!

YES, 3 out of every 4 of your customers need Fram! Today, millions of motorists are driving without oil filters . . . millions more are driving with dirty, sludged-up cartridges. As a result, they're increasing the wear on motor parts and heading straight for the junk pile. These motorists *need* Fram filters and replacement cartridges to cut motor trouble, break downs and costly repairs . . . to keep motor oil physically, visibly and chemically clean. Now, more than ever before, *no engine is complete without an oil filter . . . and no oil filter is complete without a clean cartridge.* So if you're not asking every motorist, "How's

your oil filter?" you're missing the chance of a lifetime!

Remember, Fram helps you service your share of this big market with a profitable, high - quality product backed by powerful national advertising and timely merchandising. So use the Fram tested sales material and display the entire Fram line. And ask your jobber about the specially-priced coveralls and shop-coats . . . plus other valuable dealer aids . . . now available to Fram dealers. Call your Fram jobber now!

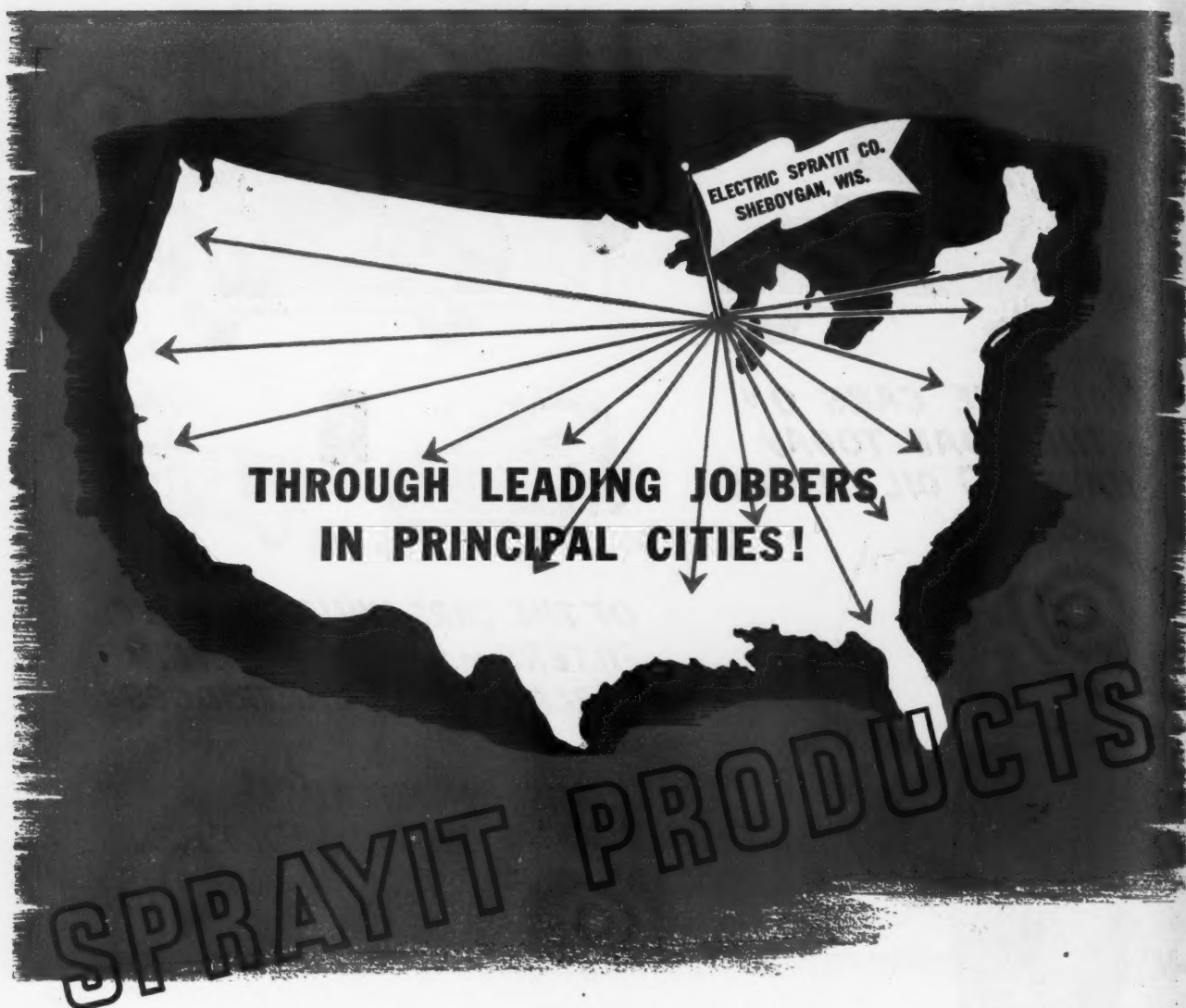
FRAM CORPORATION

Providence 16, R. I.

In Canada: J. C. Adams Co., Ltd., Toronto

FRAM Oil and Motor Cleaner

When writing to advertisers please mention Motor Age



● The fine performance of Leading Jobbers in building an efficient and economical national distribution of merchandise and equipment in years gone by is a matter of record... Their accomplishments in allocating critical consumer goods during severe shortages, and extending available supplies in the fairest possible manner is a compliment within itself... Greater and more exacting demands than ever will be placed on these Jobbers postwar, and experience tells us that every requirement will be fulfilled... Three good reasons why Electric Sprayit Company is glad that the finest products we have ever made will reach national distribution through these sources.






ELECTRIC SPRAYIT CO.

SHEBOYGAN, WISCONSIN




TIME IS MONEY



Circo Chief

DEGREASER SAVES TIME • MATERIALS

Profit or loss on any parts cleaning job is measured by the yardstick of time, labor, and materials.

"Circo Chief" degreaser steps up cleaning schedules gaining hours on all other cleaning methods, saving material and what's vitally important, saving manpower.

"Circo Chief" boasts of 5 different cleaning methods: vapor cleaning (automatic), drying (automatic), spraying (automatic), dipping, and soaking.

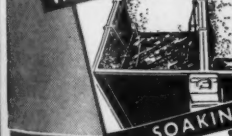
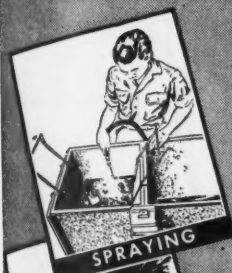
Here's a sample of "Circo Chief" time-saving. It vapor cleans and dries dirty greasy parts in from three to four minutes. No other cleaning method can match this performance in thorough cleaning, in time consumed, or in labor used. Each and every second counts with a "Circo Chief", it's a matter

of minutes for a complete cleaning job, not hours of wasted time, effort and materials.

Simple and easy to operate, you merely put parts in vapor tank, and in three minutes, out they come, spotlessly clean and perfectly dry. It cleans all types of metal parts at the same time without any harmful effects. Solvent can be used anywhere as it is non-inflammable.

Time alone is what swings a parts cleaning job into a profit or loss and with a "Circo Chief" degreaser, every job is profitable because it automatically cleans and dries much faster, more thoroughly with no wastage of material or man hours.

Initial cost of "Circo Chief" degreaser is unusually low, and it is inexpensive to operate and maintain.



5

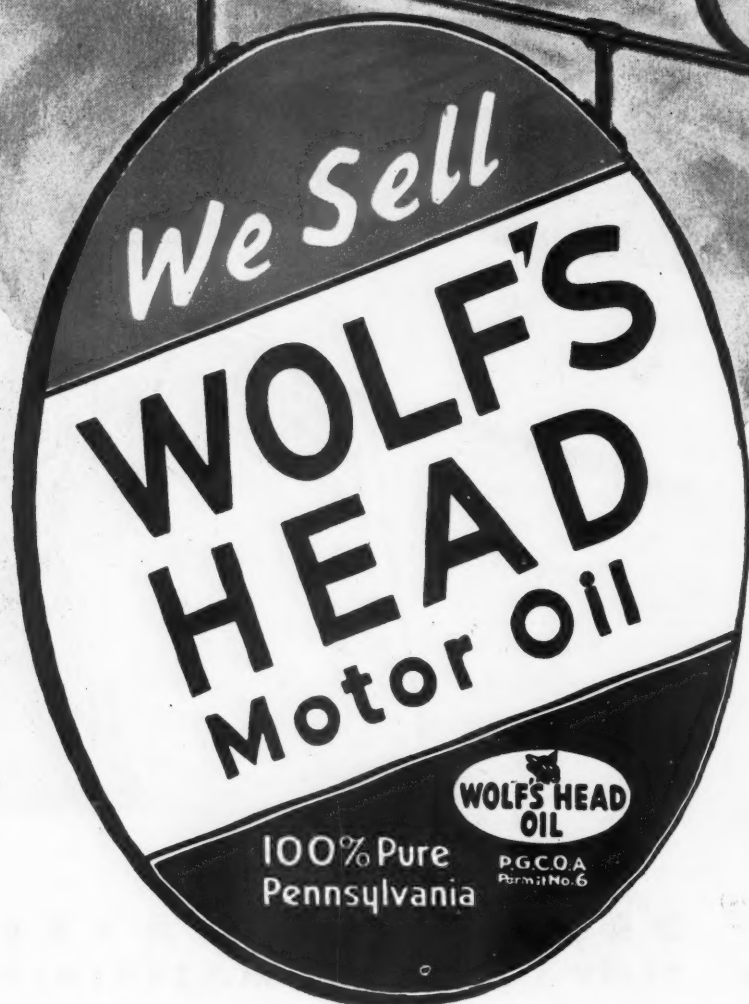
CLEANING METHODS IN ONE UNIT



CIRCO

PRODUCTS COMPANY

2835 CHESTER AVENUE • CLEVELAND 14, OHIO



The "Buy-Sign" for Lubrication

Never before has the American public been so lubrication-conscious as today. They know that every car, truck and bus must be kept running for the duration and for some time after. They demand the highest quality lubrication. That is why the Wolf's Head sign is the "buy-sign" for lubrication. Car owners know that year after year Genuine Wolf's Head has been the "finest of the fine" Pennsylvania oils and lubes, constantly improved to keep pace with changing engine design and abnormal operating conditions.

It is the oil used by leading airplane engine manufacturers for their critical break-in runs. It is the oil shipped

around the world for use in United Nations planes. It is the oil preferred by fleet operators, because they, as well as individual car owners, know that Wolf's Head will keep their motors running longest.

WOLF'S HEAD LABORATORY CONTROL SERVICE

A free technical service for each of your fleet customers, large or small. Analyzes crankcase oil from each unit and makes definite suggestions for prolonging motor life. Write for the facts today. Wolf's Head Oil Refining Co., Inc., Oil City, Pa., or New York 10, N. Y.

HOW TO REPAIR SYNTHETIC RUBBER TUBES *Safely*

MAKE PERMANENT SYNTHETIC RUBBER REPAIRS BY THE SPEAKER SYSTEM

Worked out in cooperation with leading rubber companies

Bitter experience has proved that lasting repairs CANNOT be made on synthetic rubber tubes with ordinary patches. Synthetic rubber repairs MUST BE VULCANIZED! SPEAKER Synthetic Vulcanizing Units were scientifically developed to match the peculiarities of synthetic rubber. They make a permanent "welded" repair that's stronger than the tube itself. Thousands of fleet operators and service and repair stations depend on SPEAKER repairs. And all over the world, our mechanized armed forces use SPEAKER MATCH PATCHES. For small repairs, order S-40 Group Package and for large repairs, order SGU-15 from your jobber. They assure safe, dependable repairs of BOTH synthetic (buna and butyl) and natural rubber.

SGU-15 ASSORTMENT

Inner tubes made of synthetic rubber tear far more easily than natural rubber tubes. Therefore, extreme care must be used in making repairs. The vulcanizing method is best for repairing any injury in a synthetic tube. Speaker "Match Patches" fulfill all requirements for safe, permanent vulcanized repairs.

Ordinary nail holes should not be enlarged for repairing but cuts and tears should be trimmed as illustrated and described in the following instructions.

STEP NO. 1

Examine injury. Cut out edges of the tear or injury so that opening will be at least a quarter inch wide. (Use sharp scissors.)

The ends of all elongated injuries should be made round to avoid further tearing. See illustration.

STEP NO. 2

Be sure tube is perfectly dry. Buff inside and outside surfaces around injury over an area slightly larger than the patch to be applied. Buff at right angles to the long sides of injury (to avoid grooving). Wipe off buffing dust with clean cloth. Do not wash surface with gasoline nor touch surface with hands. See illustration.

STEP NO. 3

In the "Match Patch" synthetic combination package is a quantity of special reinforcement gum (to be used for interior reinforcement). Cut a piece of this reinforcement gum large enough to extend one inch beyond the injury in all directions. Remove the holland. Be sure not to touch the uncured surface with fingers. Spread rubber solvent evenly over the uncured surface and over the buffed interior surface of the tube around the injury. See illustration.

STEP NO. 4

Pick up reinforcement patch with long-nosed pliers, awl, or other instrument (to avoid touching with fingers). Insert through hole, keeping uncured side up and center same in all directions by means of cross mark. See illustration.

STEP NO. 5

Allow sufficient time for the solvent to dry. Press the under side of the buffed and cemented tube down on the reinforcement patch. Do not use fingers—use tool to press down. See illustration.

STEP NO. 6

Cut a strip of Match Patch vulcanizing gum and stitch it over the surface of the interior reinforcement patch so that it fills the entire cavity flush with the surface of the tube. Stitch it with clean screw, driver, awl, or blunt instrument. (Note: On small injuries it is not essential to level off the interior patch in this manner but it should always be done on large injuries. In all cases it assures better results.) See illustration.

STEP NO. 7

uncured surface with fingers. Place the "Match Patch" unit face down on the tube, centered over the injury.

Place tube with "Match Patch" into the vulcanizing clamp and screw clamp down as tightly as possible with hands. Full hand-applied pressure is needed to assure proper welding of both the "Match Patch" and the interior reinforcement patch to the tube.

Light the fuel in the "Match Patch" heat unit.

Do not loosen the pressure clamp from the "Match Patch" until the metal pan is cool to touch. See illustration.

THE CURED PATCH SAFE AND STRONG PERFECTLY WELDED

Figure 9 is a cross section of the tube cut through at the point where the original injury occurred, showing the perfect bond between the patch and the tube.

Speaker "Match Patch" vulcanizing units should be used for all synthetic tube repairs because they have been specially compounded for use on synthetic tubes, with heat and timing range co-ordinated to produce just the right cure. Synthetic tube repairs require a longer period of time than natural crude rubber tubes.

Cross section of finished repair

J. W. SPEAKER CORP.

1050 NORTH WEIL STREET • MILWAUKEE 12, WISCONSIN
Canadian Speaker Corp., Ltd., Montreal 3

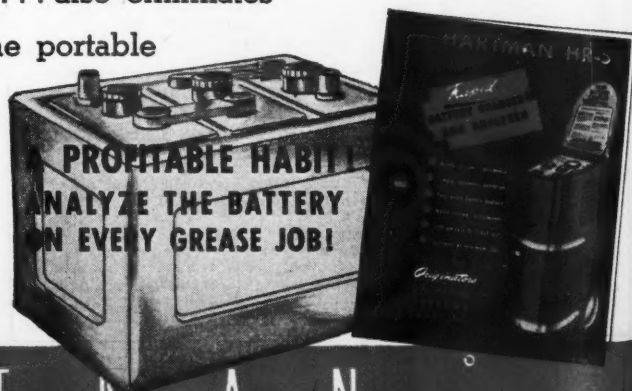
SPEAKER SPELLS SAFETY IN VULCANIZED "MATCH PATCH" REPAIRS

**"THIS IS ONE SERVICE WE CAN SELL
IN THE FACE OF ANY LABOR SHORTAGE!"**

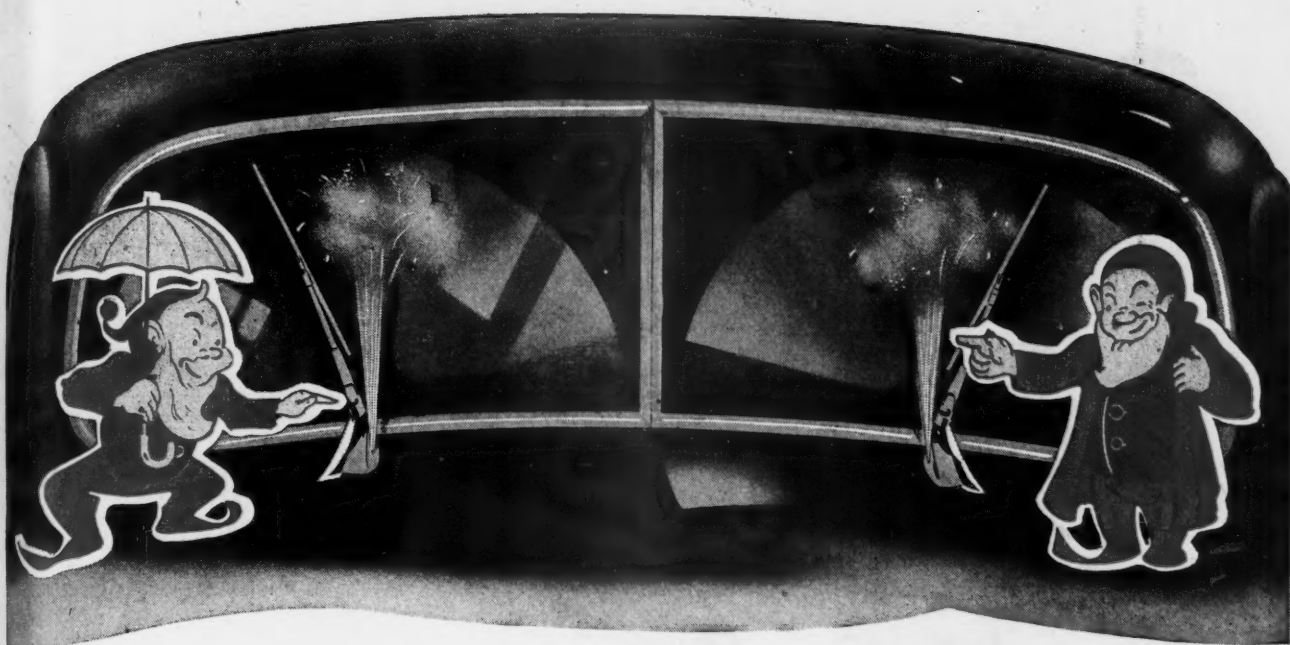


**Extra Profits with practically No Labor . . .
HARTMAN RAPID BATTERY CHARGER and ANALYZER**

Even one-man shops and service stations are piling up extra profits charging batteries with Hartman HR-53 . . . for no additional help is needed to perform this profitable service. Just hook up Hartman to the battery and go about your other work. HR-53 saves you many precious working hours . . . saves valuable space, too. It eliminates removing batteries from cars . . . also eliminates expensive auxiliary battery equipment. One portable unit, the HR-53, does the *entire job* . . . easier, faster, more profitably! Start now to make this important EXTRA profit. Send for catalog folder, or order direct from your jobber now.



HARTMAN
CORPORATION OF AMERICA
• 6417 Manchester • St. Louis 10, Missouri



RAIN or SHINE
these two little SQUIRTS

Also for
POST-WAR CARS—the
TRICO
Left-O-Matic
FINGER-TIP CONTROL FOR CAR WINDOWS



wash your
windshield WHILE YOU DRIVE

- The Trico Automatic Windshield Washer squirts two jets of water on the windshield for 16 seconds — when you want it while you drive.

The Washer makes your Wiper Blades useful in dry weather as well as wet.

In sprays of light rain, the Washer supplements — to clean the windshield quickly. And in dry weather, off goes dazzling dust and blinding grime.

Pre-war installations made driving easier on the eyes — and safer for thousands. Now ready for the cars of tomorrow is the further improved Trico Washer with new clog-proof jet control.

Operates automatically by vacuum.

TRICO PRODUCTS CORPORATION
BUFFALO 3, NEW YORK

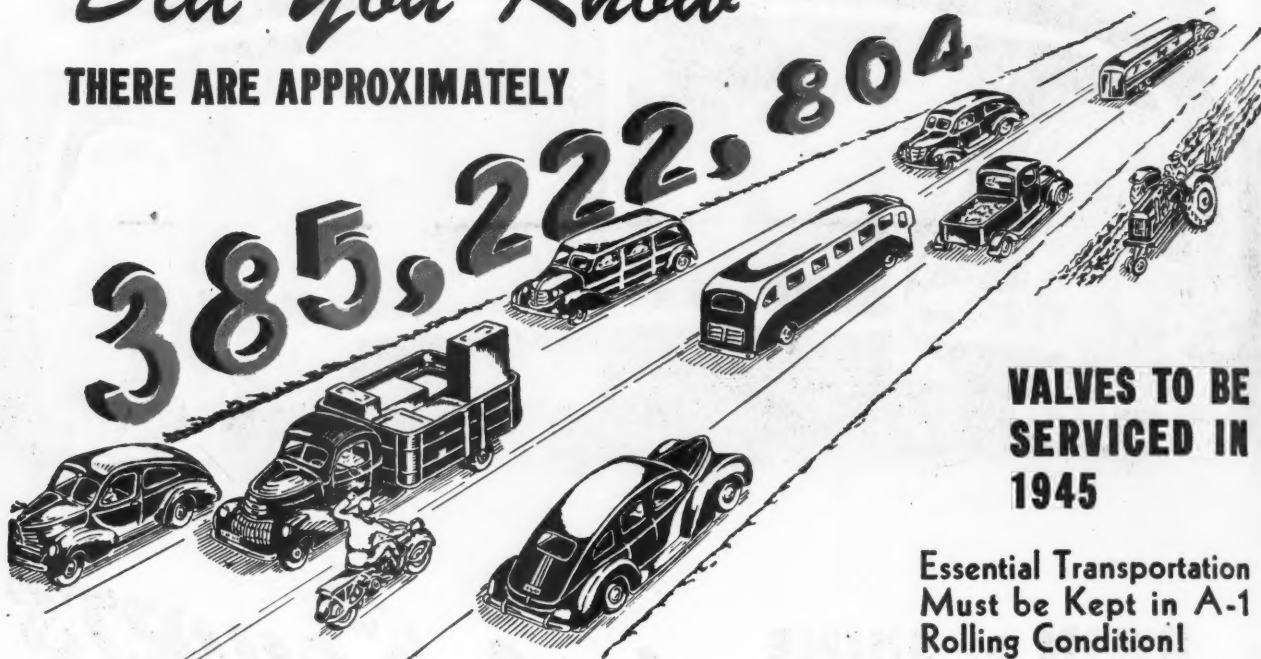
Manufacturers of vacuum-operated products, including automatic wipers used as standard equipment on millions of cars for 25 years, and of precision gauges (Micro-Chek) for 3800 war industries.

BUY AND KEEP WAR BONDS

Did You Know

THERE ARE APPROXIMATELY

385,222,804



**VALVES TO BE
SERVICED IN
1945**

**Essential Transportation
Must be Kept in A-1
Rolling Condition!**

The valve—the pulse beat of transportation—is to the automobile, truck or tractor, as the heart beat is to you and me. You don't take many chances with that ticker, do you? Neither can you risk operating your truck or automobile without periodic check-up.

When you go to a doctor for a physical check-up, he invariably starts by checking your pulse. That's where a check-up on a motor vehicle must begin! The older one gets the more often

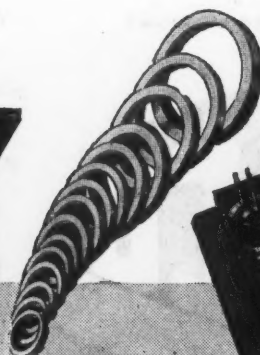
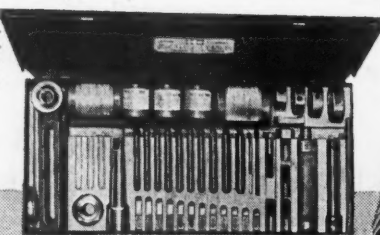
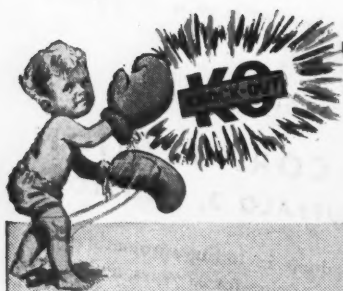
he goes for a check-up. The older your car becomes, the more often it too must be serviced.

A doctor or a mechanic is no better than the equipment with which he works. **Knock-Out** products represent years of experience, research and development in meeting the valve requirements of motor vehicles. **Knock-Out Valve Seat Grinders, Valve Seat Insert Tools and Valve Seat Rings** will act as your transportation health guard.

1. K-O Valve Seat Insert Tools are made to service all makes of motor transportation.

2. You can depend on K-O Rings. They'll be in there for miles and miles!

3. K-O Valve Seat Grinders are servicing essential transportation and doing their part to make 'em last.



Ask Your Jobber or Write Direct to

K. O. LEE COMPANY, ABERDEEN, SOUTH DAKOTA

IF IT'S MADE BY LEE . . . IT'S A KNOCK-OUT

TO MAKE ENGINES LAST, KEEP 'EM COOL

Grey-Rock

FAN BELTS and HOSE

FOR TRUCKS, BUSES, CARS, TRACTORS

Grey-Rock

FAN BELTS

Test the tension with your thumb. Best traction comes from a belt that is neither too slack nor too taut. Then rapidly accelerate motor to check for slippage.

Always replace belt if broken, cracked, or peeling, or if belt bottoms in pulley. Do not remove fan blades unless absolutely necessary.

Lubricate water pump and generator. Wipe off excess grease from belt and pulleys. Be sure pulleys are in alignment.

RADIATOR HOSE

Clogged hoses cause overheating. Flabby cover usually indicates collapsed hose. To make sure, remove all hoses and replace if tube has collapsed or rotted.

Always use correct Grey-Rock Curved hose or Flex-Hoz where indicated. Never attempt to bend straight hose.

Clean radiator and motor block connections before installing hose. Use correct length. Avoid kinks or sags. Make connections tight by using proper clamps.

SEE YOUR GREY-ROCK JOBBER
FOR ALL COOLING-SYSTEM PARTS

UNITED STATES ASBESTOS DIVISION
of Raybestos-Manhattan, Inc.
MANHEIM, PA.



For measuring battery charge electrically



Hickok Chargicator

**Does Away With Dripping Acid Hydrometers
Another Typical Hickok Specialized Instrument Development**

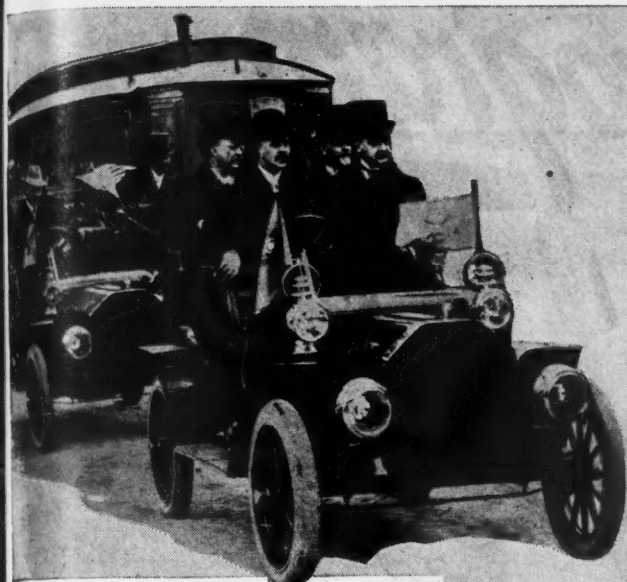
The Chargicator uses a patented design which permits supersensitive measurements, remotely indicating electrically equivalent gravity of a lead-acid storage battery. The batteries need not be disturbed, and readings need not be made at the battery.

The Chargicator is an electrical hydrometer which places no load on battery and may be left permanently connected. Weak or defective cells are quickly and accurately spotted long before actual failure occurs. Shows what charging rates to use and warns instantly of destructive overcharging. When battery is under load, pointer shifts to left as load increases, showing ability of battery to take the load.

Successfully used where batteries are inaccessible, on fire fighting apparatus, signalling systems, telegraph stations, telephone installations, battery chargers, "Quick Chargers," etc., where a continuous or quick measurement of battery charge is desirable. Write for further details.

Precision Calibrated • Lasting Accuracy

THE HICKOK ELECTRICAL INSTRUMENT COMPANY • 10564 DUPONT AVENUE CLEVELAND 8, OHIO



On his Lansing visit in 1911, the first President Roosevelt rode in a Reo car.



This Reo was very stylish in 1908 — the village smith travels in state.



This Reo Speedwagon was one of the first with pneumatic tires.



In 1910 this sturdy 4-cylinder Reo brought the market-places closer to the farms.

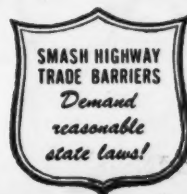


Powerful, handsome new Reos serve in essential civilian service as well as at war.

Reo has helped make transportation history

From the first Reo Speedwagon, to the big, sturdy More-Load design of today, Reo trucks have helped make transportation history. Since 1904 Reo has pioneered many important and lasting developments in truck transportation and, through constantly improved, low-cost, dependable service, fully satisfies today's most exacting demands. Reo is now producing powerful trucks and tractors for all branches of the Armed Forces of the United States and its Allies, but a limited quota of Reo trucks and tractors has been released for essential civilian service during 1945.

REO MOTORS, INC. • LANSING 20, MICHIGAN, U. S. A.
Factory Branches in Principal Cities



REO

1904 • AMERICA'S TOUGHEST TRUCK • 1945

The Program with a KICK

... SELLS THE
BATTERY WITH A KICK



RADIO COAST TO COAST

Action-getting spot radio commercials beamed directly to battery buyers in your territory—the most effective spot radio program in battery history!



SALES-BUILDING KITS

Colorful displays, window trims, novelties—all designed to help you build volume and profits right at the point of sale.



PREST-O-LITE PROFIT PLAN

Prest-O-Lite's Profit Plan is made-to-order for dealers who want to do more business—make more money. To cash in on Prest-O-Lite in 1945, see your jobber, or write to

PREST-O-LITE BATTERY COMPANY, INC.

INDIANAPOLIS 6

INDIANA

prest-o-lite

INLAND Bonded Dealers Talk about SERVICE-STATION VULCANIZING...

"EASY TO OPERATE"

Willard Zumberg
San Antonio, Texas

"With my Inland Equipment, I repair practically all the tires that my customers bring in. It requires no particular skill and I can prepare a tire for the vulcanizing press in less than 20 minutes."

"\$1500 TIRE REPAIRS IN 10 MONTHS"

Edward J. Wruck
South Milwaukee, Wisconsin

"I have done over \$1500 worth of vulcanized repairs on my Inland equipment in 10 months. It paid for itself in less than two months and I have never had an Inland-Repaired tire fail me or my customers."

"PAID FOR ITSELF IN 90 DAYS"

Frederick Darrin
Schenectady, New York

"My Inland Vulcanizing Unit is one of the most profitable pieces of equipment in a very complete shop. By charging my customers only moderate prices, it paid for itself in 90 days without curtailing any other service work I do. Since then, nearly every cent I take in on it is clear profit."

"NEVER HAD AN INLAND REPAIR FAIL"

Mrs. Charlotte Dillon
Creston, Iowa

"I repair on an average of 8 tires a day... a record I've been maintaining for many months. So far I've never had an Inland-Repaired tire fail. Both our customers and we are completely sold on the Inland Vulcanizing Method as the safest, most dependable way to keep them rolling for the duration."

**Here's the Simple, Easy-to-Operate
INLAND Equipment That These
Dealers Use . . .**



Any service station operator can take this compact vulcanizing unit and quickly turn out a professional factory-perfect job. The complete Inland Unit takes up very little of your valuable space... handles tread and sidewall repairs on passenger tires up to 7.50 x 16. You can get the small investment required back in less than a month with only two jobs a day.

● These dealers, like thousands of other Inland dealers, had little previous tire repair experience. They formerly sent profitable vulcanizing jobs to the other fellow because they were not equipped to handle them. Now, as Inland Dealers, they are making EXTRA profits up to \$15.00 per day doing their own vulcanizing right in their own station.

Inland Dealers, without skilled help or tire repair experience, quickly learn with Inland personal instruction to make Inland Vulcanized Sectional Repairs that are the strongest part of the tire—repairs *guaranteed for the Life of the Tire*.

Every Inland Bonded Dealer gets the easy-to-operate Inland Equipment to make guaranteed repairs... plus a \$1000 Bond to back up this guarantee... and a money-making, field-tested merchandising plan. All these advantages of the Inland Plan mean extra money to the Inland-Equipped service station.



**SEND COUPON NOW FOR
FREE FOLDER...**

INLAND RUBBER CORPORATION
33 So. Clark St., Dept. MA-6, Chicago 3, Ill.

Please send me free information on how I can become an Inland Bonded Dealer.

Name.....

Address.....

Town.....

INLAND RUBBER CORPORATION

Subsidiary of Minnesota Mining & Manufacturing Company
Branches in thirteen principal cities

TIRE MANUFACTURERS SINCE 1910

Headed for the top?



There's "room at the top" in the automotive service business . . . and United Motors Lines will help you "arrive." They include the original-equipment parts and products used for many years in the manufacture of leading makes of cars in every price range . . . the original equipment needed to keep cars in perfect driving condition. Your service operations will be made more adequate with the broad coverage provided by United Motors Lines. See your United Motors distributor, or write us direct.

Returning veterans: Write today for information concerning a profitable automotive service business of your own. A United Motors Service franchise will pave the way.

BUY WAR BONDS

UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION

GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

**These
UNITED MOTORS
LINES
Will Never Let
You Down**

DELCO Batteries

INLITE Brake Lining

DELCO Radio Parts

HYATT Roller Bearings

DELCO Auto Radios

HARRISON Heaters

**DELCO-REMY Starting,
Lighting and Ignition**

**NEW DEPARTURE
Ball Bearings**

DELCO Shock Absorbers

HARRISON Thermostats

GUIDE Lamps

**AC Fuel Pumps, Gauges
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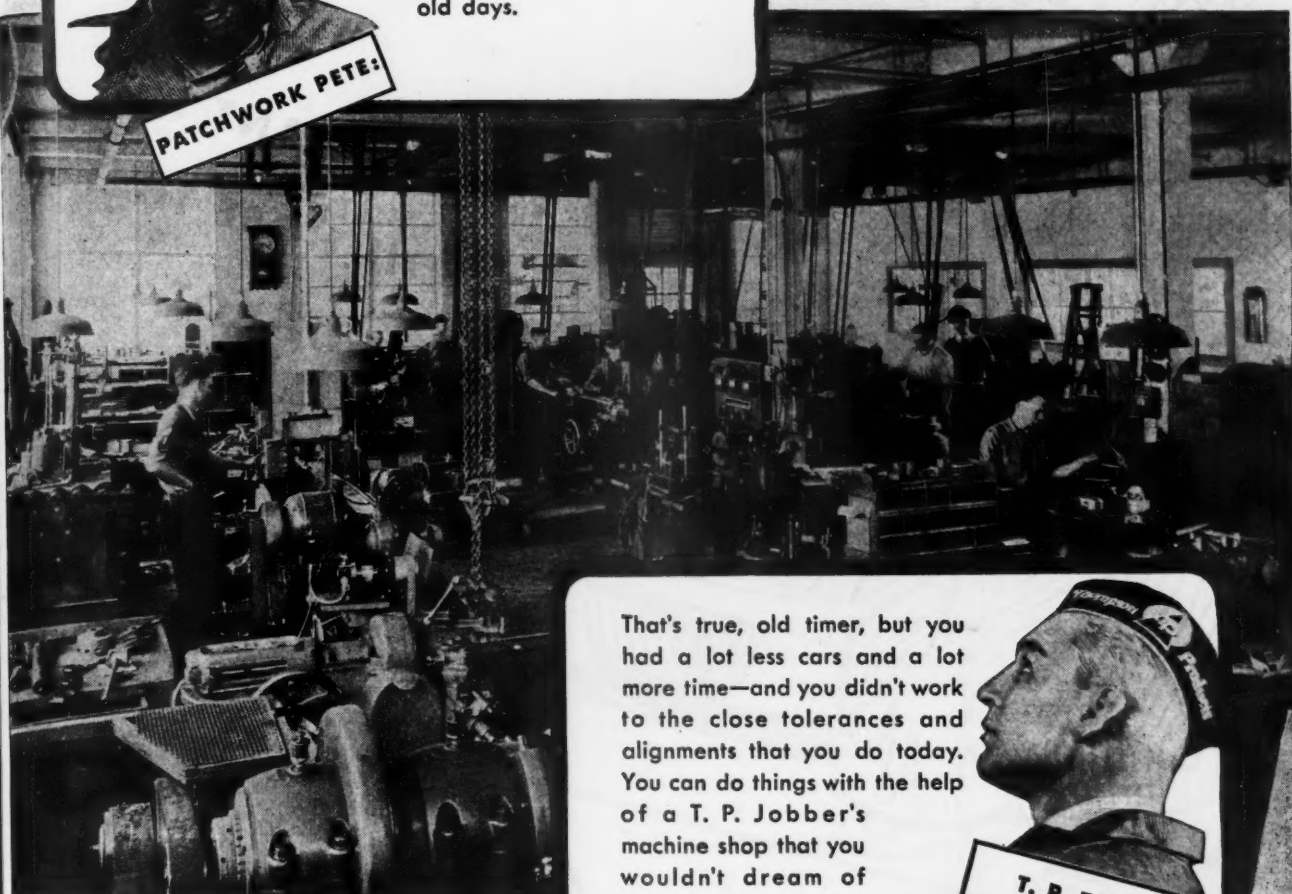




PATCHWORK PETE:

Shucks, we didn't have no high-falutin' machine shops doin' our jobs fer us in the old days.

This shop of BEE, INC., Allentown, Pa., typifies the modern facilities and precision workmanship offered by T. P. Jobbers' Machine Shops.



That's true, old timer, but you had a lot less cars and a lot more time—and you didn't work to the close tolerances and alignments that you do today. You can do things with the help of a T. P. Jobber's machine shop that you wouldn't dream of doing in the old days.



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THOMPSON PRODUCTS JOBBERS PROVIDE MODERN MACHINE SHOP SERVICE TO REPAIRMEN EVERYWHERE IN THE UNITED STATES

THOMPSON Products Jobbers have gone in for machine shop service in a big way. These shops have the most modern equipment for highly specialized precision work on engine and chassis. The mechanics in these shops are experts in their field. There is scarcely a place in the United

States which does not have a representative T. P. Jobber Machine Shop located nearby for good, prompt service. In this wartime emergency, these services are offsetting manpower shortages and the big overload of automotive repairs and engine rebuilding.

Precision Parts for Aircraft and Military Engines—Replacement Parts for Automotive Engines and Chassis.

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GASOIL HOSE THAT
WILL NOT ROT,
CLOG, LEAK OR
BREAK

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RESISTOFLEX
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Totally unaffected by gasoline, diesel
fuel, lubricating oils and vibration...
withstands more flexing and torsion
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"Never Lets You Down"

That's why they're known to Millions as
Those Doggone Good Tools!

IN these days of new tool scarcity, the ability of **Duro-Chrome** Tools to endure the toughest usage and yet retain their new tool precision is proving over and over again the old adage that "there's no substitute for quality!"

HOT BROACHED SOCKETS exemplify the rugged stamina built into every **Duro-Chrome** tool...from start to finish these tools are built to never let you down!

When easing military and war production requirements relax production restrictions, not only will **Duro-Chrome** Tools be available again in pre-war quality finishes, but also they'll embody many new advances in tool manufacture. So today buy only the tools for essential needs...the new **Duro-Chrome** Tools will be worth waiting for.

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The Mechanic's Best Friend
OVER A BILLION BUILT SINCE 1916

ALSO MAKERS OF DURO MACHINE TOOLS

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**DAN
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MAN**

**UNBALANCED TENSION
Kills TUBES**

THE *Approved*
**RUBBER
LUBRICANT**
FOR
Synthetic
TIRES • TUBES • FLAPS



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Kills TENSION**

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With Ru-GLYDE, the scientific, ready-to-use, wet lubricant for rubber, correct mounting is simple. Easily applied. Wets and lubricates evenly so that tube and flap seat with minimum pressure, and slip, not stretch, into place. 100% safe. Won't cause rust or static. Harmless to natural or synthetic rubber; and to wheel and rim finishes.

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MUSKEGON • MICHIGAN



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Don't Fool Around!
Just Push a Button

Available Now! Universal Change Over Complete SOLENOID STARTER UNIT

Designed and built for durable service and performance. Every Chevrolet and Plymouth owner needs this unit. Fits all cars with regular Bendix Starter.

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Glamour goes by Short Wave



LANA TURNER, guest star, and Dick Haymes, emcee, brought news of home to a Coast Guardsman in Honolulu in the two-way conversation featured on "EVERYTHING FOR THE BOYS." The Auto-Lite global half-hour musical is aired Tuesday nights NBC coast to coast. Lana Turner is starred in the new Metro-Goldwyn-Mayer picture, "Week-end at the Waldorf."

*Look Inside and You'll See
Why There IS No Substitute*

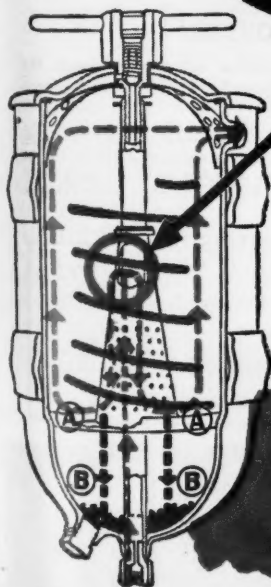


Cone

It takes depth to Actually Cleanse Oil, especially Heavy Duty (detergent) oils! To provide this depth, DeLuxe Filters feed the oil from the bottom of the cartridge so that the oil can travel the entire length of the cartridge! To permit the oil to enter (a) at the lower end and to uniformly distribute the oil around the base of the cartridge, the DeLuxe cone is essential! Note also the CONE permits heavy particles (b) to drop unhindered into the non-agitated sump!

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Cotton Cartridges tend to compress when oil is fed through them, thus impeding and sometimes entirely stopping the oil flow through the cartridge. The **EXCLUSIVE DELUXE SPRING** insures against collapse, guarantees the maintenance of the correct rate of flow for complete oil cleansing.



**ONLY DELUXE CARTRIDGES HAVE THE BUILT-IN SPRING AND CONE . . .
AND BOTH ARE ESSENTIAL TO FILTRATION THAT ACTUALLY CLEANSSES THE OIL!**

Yes . . . the DeLuxe Filter actually cleanses oil of asphaltenes before (not after!) they can combine to form sludge and other contaminants. You secure this superior performance which *keeps your engine free of sludge* because of the exclusive Spring and Cone

found only in the DeLuxe cartridge and four other advanced features of oil filter construction, all of which are found only in DeLuxe! DeLuxe Products Corp., 1404 Lake Street, La Porte, Indiana.

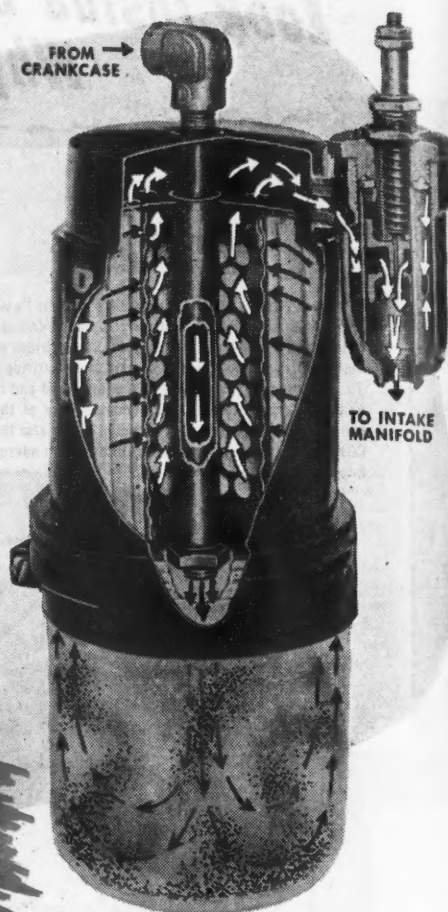
DELUXE *Oil Filter*
ACTUALLY CLEANSSES OIL

OILDEX OIL DILUTION EXTRACTOR

Pat. No. 1,990,657. Other Pat. Pending. Trade Mark Registered

Perfected...
METERED and CONTROLLED
Crankcase Ventilation
Plus — These Additional Advantages

- Removal of water, acid and unburned gasoline from the crankcase.
- Rapid detection of leaky or porous blocks and blown gaskets.
- Restriction of sludge formation and crankcase varnish.
- Protects driver, foodstuffs, etc., from obnoxious crankcase fumes.



HERE'S AN ACTUAL CASE



... Owner of Oldsmobile equipped with OILDEX ... noted glass jar filled abnormally fast ... Removed jar, emptied it, and within a few days it filled again as shown at left ... Upon examination found blown cylinder head gasket ... proving again the great value of OILDEX as a Trouble Detector!

The filled jar was turned over to us as a matter of interest and after settling for few days separated into stratifications shown. Contents are now at chemical laboratory for analysis. Copy of analysis sent on request.

In normal operation the glass jar requires no attention as the sludge is trapped in the OILDEX Vapor filter element and the water vapors consumed by the motor. **THUS IF GLASS JAR FILLS QUICKLY SUSPECT CRACKED BLOCK, CYLINDER HEAD OR BLOWN GASKET.** This trouble detecting feature is **EXCLUSIVE** with OILDEX — one of the many features that distinguish OILDEX controlled and metered crankcase ventilation.

• ANOTHER PLUS FEATURE OF OILDEX

OILDEX extraction of liquid and vapor impurities not only prolongs the life and efficiency of the MOTOR, but incidentally protects and prolongs the life and efficiency of the OIL FILTER!

QUICKLY AND PROFITABLY INSTALLED ON ANY MOTOR. ALL MAKES OF CARS, TRUCKS, BUSES, MARINE AND STATIONARY GASOLINE ENGINES CAN BE EQUIPPED. Specify model and year of car when ordering on our money back guarantee. OILDEX lists at \$15.00 — FILTREX \$10.00 — Complete with Fittings. (Slightly higher on West Coast.)

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FILTREX

Pat. No. 2,106,518 Other Pat. Pending Trade Mark

ADVANTAGES

- Light—Compact—Strong
- Series of different densities of filtering elements
- Partially balanced method of filtration
- Low cost of replacements

With OILDEX removing liquid and vapor impurities and FILTREX removing solid and semi-solid impurities the motor receives **COMPLETE** Protection.

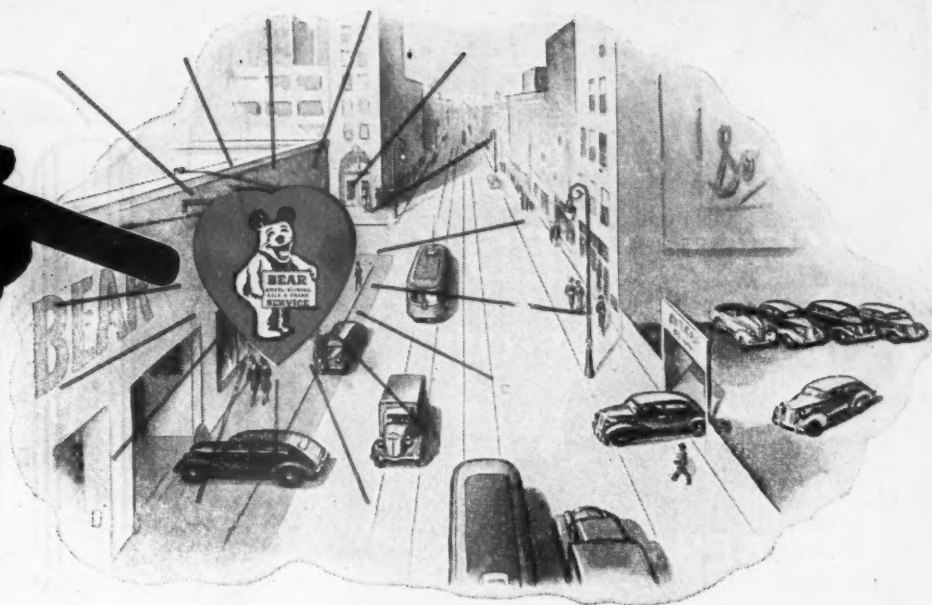
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SUBSIDIARY OF WATSON ELEVATOR COMPANY, INC.

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for Now AND
Post-War!**



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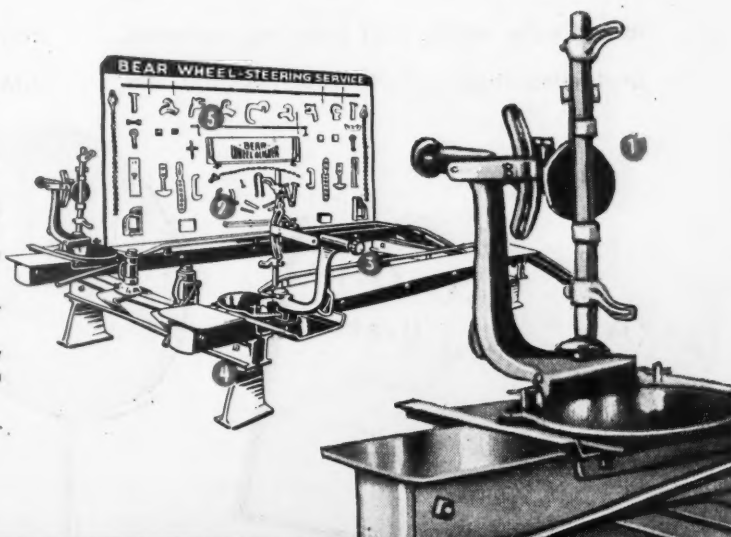
OUT IN FRONT is not only helping his country but he is building a **permanently profitable post-war business**. No Alinement Service Sign can mean so much to you as the BEAR SIGN! This BEAR sign is Nationally Advertised. It means alinement and allied service to MORE PEOPLE THAN ANY OTHER! *It is displayed by more dealers than any other!* The Time to Plan Your New BEAR Sign is NOW. The Time to Get Needed

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Users say Features Like This Make the
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7. **DOES MORE**... for example, you can pull a knee ahead... straighten rear housing... handle up to 1½ ton jobs.



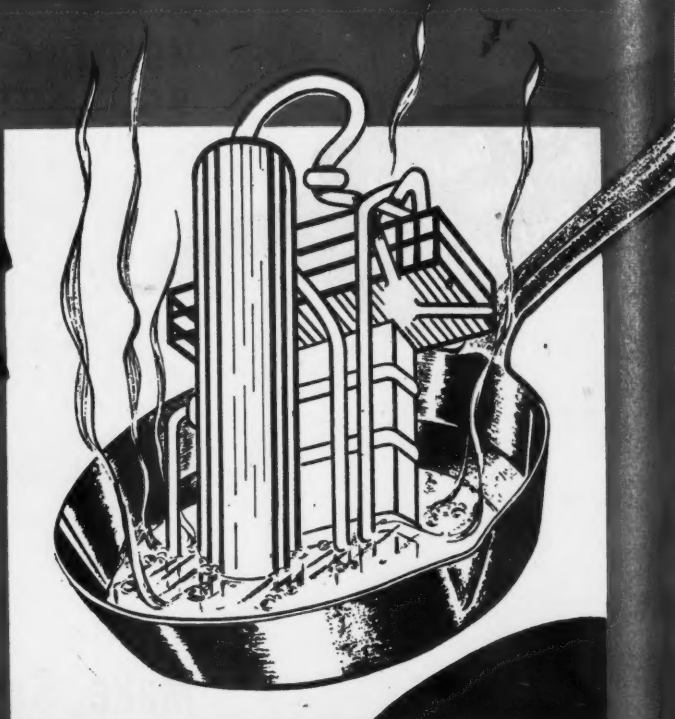
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IF THE VITAMINS ARE
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 OUT OF THE OIL
 YOU SELL

GET BEHIND

AMALIE!



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JUNE, 1945

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Builders of Good Lathes since 1919

- Heavy Bronze bearings
- 1" Collet capacity
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More important, there are 173 types... a kind of screw driver for every job... that makes for better, faster work

with Vaco Amberyl plastic handle screw drivers. They are shock-proof and break-proof. They fit the hand smoothly yet provide a sure grip

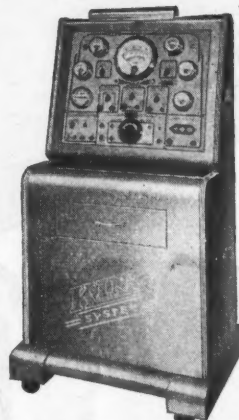
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We cannot supply all "KING" Testing Equipment, but we are permitted to make small Testing Units, Battery Chargers, and Welders within our quota limitations. Even from this limited supply you may be able to obtain the units you need. Jobbers buy from us on WPB Form 547 or PDIA and Dealers buy from "KING" Jobbers without a priority rating. It is impossible to fill all orders now for "KING" Testing Equipment but we are looking forward to the time when we shall be able to give the same prompt service as in past years.

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Stay put

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● Use Kester Acid-Core Solder for general purposes and Kester Rosin-Core Solder for electrical work. Both come in a wide range of core and strand sizes.

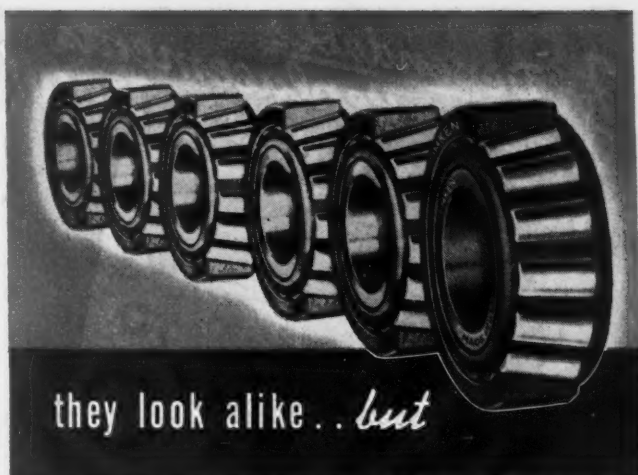
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KESTER
Cored Solders
FOR EVERY AUTOMOTIVE USE



Sure they look alike—as much alike as identical twins, but *boy there's a difference!* Fifty years of constant engineering development and research have made Timken Bearings famous the world over for their unexcelled performance . . . all others are imitations.

And when you install Timken Bearings you're not experimenting. You get the benefit of correct bearing design, material and construction *plus* this background of long experience in applying the bearing to meet the individual specialized requirements of any type equipment in all industry.

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Remember though "TIMKEN" doesn't mean just any tapered roller bearing. It is a registered trade-mark which identifies the product of the largest and most prominent bearing manufacturer, who pioneered and perfected the tapered roller bearing. Be sure the trade-mark "TIMKEN" is on every bearing you buy—it's your assurance of enduring service and lasting satisfaction.

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TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

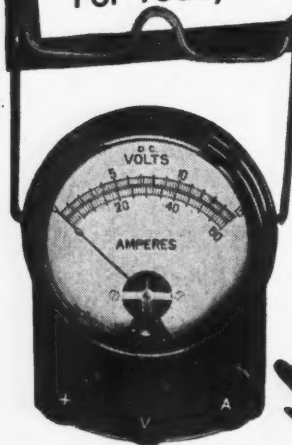
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GENERATOR TESTER
For Today's Vital Ignition Service



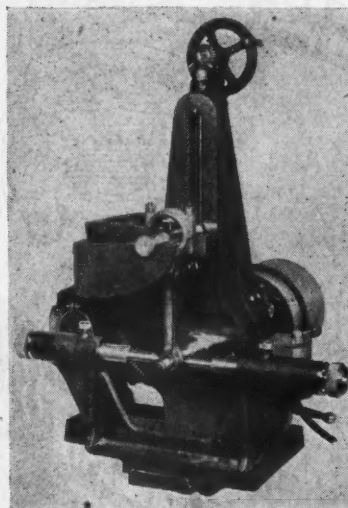
MODEL GT-4
A two range meter—precision type—with scales of 0-60 amps. and 0-15V. enables you to make a score of tests and precise adjustments on both 6 and 12 V. systems.

Mechanized war demands thousands of dependable testing instruments to keep motorized fighting equipment in battle trim. That's why your Jobber does not always have an ample stock of Hoyt instruments readily available for your immediate needs. Yet, we are managing to deliver a reasonable volume to enable you to carry on today's vital ignition maintenance services. The pocket-sized, HOYT GT-4 Generator Tester illustrated here is one instrument that is doing its share, testing voltage regulators to keep home front ignition systems in condition. Ask about it.



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PORTABLE ACCURATE FAST



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DIVISION OF AIR-PARTS INC.

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ARMATURE LATHE
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A SHOP NECESSITY

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The TRUCUT machines and undercuts commutators, makes them like new, in 5 minutes.



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Armature Lathes & Undercutters

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**ONLY SIX
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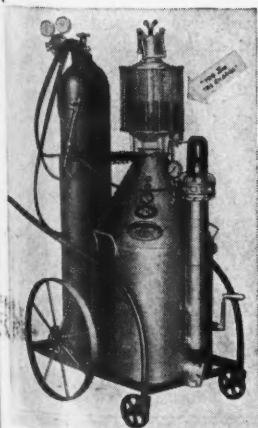
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COMPLETE SPECIFICATIONS**

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If you'd like to have more information, contact your jobber or

THE SIGHT FEED GENERATOR COMPANY
RICHMOND, INDIANA

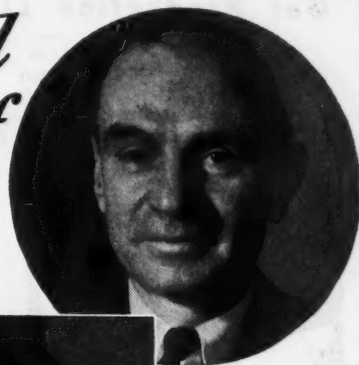
Advertisers' Index

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A C Spark Plug Div. General Motors Corp.	65	Flex O Tube Co.	81	Oakite Products, Inc.	146
AP Parts Corporation.	92	Ford Motor Co.	118	Oil-Dri Company of Amer.	98
Actus Products Co.	87	Fox Products Company.	106	Oldsmobile Div. GM Corp.	151
Air Parts, Inc.	148	Fram Corporation.	123	P & D Mfg. Co.	62
Air Reduction Sales Co.	58	Gabriel Company, The.	52	Pedrick Piston Rings.	8-80
Airtex Automotive Corp.	6	Gatke Corporation.	80	Pennzoil Co.	106
Allen Electric & Equip. Co.	76	General Motors Corp.	55	Permatex Co., Inc.	3
Aluminum Co. of Amer.	69	Gerlach Co., E. A.	58	Petroleum Solvents Corp.	102
Amalie Div. L. Sonneborn Sons, Inc.	144	Globe-Union, Inc.	62	Pratt Industries, Inc.	109
American Brakeblok Div.	101	Gray-Mills, Inc.	86	Prest-O-Lite Battery Co., Inc.	134
American Grease Stick Co.	140	Guide Lamp Div., G. M.	83	Puritan Co., Inc.	96
American Hammered Piston Ring Div. of Koppers Co.		Hall Mfg. Co.	107	Ramsey Accessories Mfg. Corp.	3rd Cover
	Back Cover	Hansen Manufacturing Co.	39	Raybestos Div.	63
Aro Equipment Corp., The.	114	Harrison Radiator Div.	95	Reo Motors, Inc.	133
Arrow Safety Device Co.	110	Hartman Corp. of America.	128	Resistoflex Corp.	138
Automotive Mfg. Co., Inc.	140	Hasco Products, Inc.	68	Rinck-McIlwaine, Inc.	152
		Hastings Mfg. Co.	2nd Cover	S.K.F. Industries, Inc.	114
Baldor Electric Co.	110	Hickok Electrical Instrument Co., The.	132	St. Louis Spring Co.	100
Basca Mfg. Co.	94	Hollingshead Corp., R. M.	51	Schrader's Son Div., A.	116
Bear Mfg. Co.	143	Hudson Motor Car Co.	73	Sealed Power Corp.	16
Bell Co., Inc., The.	120	Hulbert Creeper Co.	94	Service Supply Company.	104
Black & Decker Mfg. Co.	59	Hygrade Products Co.	96	Sheldon Machine Co.	146
Blackhawk Mfg. Company.	77	Hyland Manufacturing Co.	100	Shurhit Products, Inc.	90
Blue Crown Spark Plug Co.	86			Sight Feed Generator Co. The.	149
Bonney Forge & Tool Works.	102	Imperial Brass Mfg. Co.	70	Snap-On Tools Corp.	90
Borg-Warner Corp.	1	Inland Mfg. Div.	119	South Bend Lathe Wks.	54
Bowes "Seal Fast" Corporation.	121	Inland Rubber Corp.	135	Southern Friction Materials Co.	98
Buell Manufacturing Company.	104	International Chain & Mfg. Co.	106	Speaker Corporation, J. W.	127
Buffalo Pressed Steel Co., Inc.	117			Standard Motor Products, Inc.	110
Buick Div. General Motors.	42	Johnson Bronze Co.	90	Texas Company.	4
Burton-Rogers Co.	148			Thompson Products.	137
		Kem Mfg. Co.	100	Timken Roller Bearing Co., The.	147
Central Equipment Co.	46	Kerkling & Company.	88	Trico Products Corp.	129
Champ Items, Inc.	149	Kester Solder Co.	147	Tyson Bearing Corp.	89
Champion Spark Plug Co.	47	King Quality.	99	U. S. Air Compressor Co.	61
Chicago Tool & Engrg. Co.	108	Koppers Co., American Hammered Piston Ring Div.		U. S. Asbestos Div. Raybestos-Manhattan, Inc.	9-131
Chrysler Corp.	15		Back Cover	U. S. Axle Co.	40
Circo Products Company.	125	Lee Co., K. O.	130	U. S. Industrial Chemical Co.	85
Clayborne Mfg. Co.	152	Lempco Products, Inc.	44	United Autographic Register Co.	38
Continental Rubber Wks.	64	Lincoln Engineering Co.	68	United Motors Service Div. G.M.	136
Country Gentleman.	67	Lion Auto Parts & Mfg. Co. Inc.	148	United Parts Mfg. Co.	66
Crescent Company.	104	Logan Engineering Co.	82	United States Electrical Tool Co., The.	96
Curran Corp.	62	Loney Co., Harley C.	152	Universal Parts Co.	53
				Vaco Products Co.	146
Delco Products Div., G.M.	115	McAleer Manufacturing Co.	48	Valvoline Oil Company.	94
Delco Remy Div., G. M.	5	McBurney, A. D.	108	Victor Mfg. & Gasket Co.	86
De Luxe Products Corp.	141	McQuay-Norris Mfg. Co.	43	Wagner Electric Corp.	45-91
De Soto Div. of Chrysler Corp.	105	Magnus Chemical Company.	80	Walker Mfg. Co. of Wis.	10-11
De Vilbiss Company.	111	Mansfield Tire & Rubber Co.	74-75	Warner-Patterson Co.	114
Dodge Div. of Chrysler Corp.	122	Maremont Automotive Prod. Co.	72	Waverly Petroleum Products Co.	72
Duro Metal Products Co.	139	Mid-Western Auto Parts.	61	Wayne Pump Co.	108
		Moog Piston Ring Co. Div. Moog Industries, Inc.	100	Weatherhead Co.	103
E. A. Laboratories.	60	Motor Economy Products, Inc.	142	Weidenhoff Inc., Joseph.	93
Edelmann & Co., E.	72	Motor Master Products Corp.	86-98	Wherry Engineering Co.	84
Egan Mfg. Co., H. B.	84			Wilkening Mfg. Co.	8-80
Eis Mfg. Co.	116	National Automotive Parts Association.	78-79	Willard Storage Battery Co.	145
Electric Auto-Lite Co.	12-13-41-140	National Carbon Co.	112-113	Williams & Co., J. H.	14
Electric Heat Control Co.	146	Neilson Chemical Co.	152	Wirey Joe.	104
Electric Sprayit Co.	124	New Process Gear Corp.	97	Wittek Manufacturing Co.	76
Electric Storage Battery Co.	71	Niehoff & Company, C. E.	68	Wolf's Head Oil Refining Co.	126
Emerol Mfg. Co., Inc.	56	North American Electric Lamp Co.	152	Wood Co., Frank N.	148
Empire Electric Brake Co.	57			World Bestos Corp.	50
Ethyl Corporation.	7				
Everhot Products Co.	61				
Farm Journal and Farmer's Wife.	2				
Federal-Mogul Corp.	49				
Fitzgerald Mfg. Co., The.	102				

HOW DEALERS FEEL ABOUT OLDSMOBILE...NO. 33, DETROIT, MICHIGAN

"Oldsmobile has developed dealer help to the point of near perfection!"



Arthur T. Shore (above), Ray M. Severs (at left), partners, Shore-Severs Company.

SHORE-SEVERS CO.
13039 LIVERNOIS AVE. AT EWALD CIRCLE
DETROIT, MICH.
PHONE HO 8471 8700

May 3, 1945

Mr. D. E. Ralston
General Sales Manager
Oldsmobile Division
Lansing, Michigan

Dear Mr. Ralston:

Having been an Oldsmobile dealer for the past twelve years, we would like to take this opportunity to express our appreciation for the co-operation you have given us. This co-operation is one of the many reasons why we regard the Oldsmobile franchise so highly.

During the earliest days of the war, we were naturally somewhat apprehensive as to our future in this business. However, it wasn't long before the Oldsmobile factory gave us new confidence - and inspiration. Oldsmobile put into effect a program that helped us hire and train mechanics, and assisted us in setting up a more comprehensive service follow-up system. Again, when parts became difficult to secure, Oldsmobile helped us obtain the parts we needed in handling three times the customer labor volume we had handled before the war.

We believe that any dealer's success over the years depends on factory understanding of dealers' problems, and the help that is provided through zone and field personnel and through the Business Management Department and the Service and Parts Departments. I am convinced that Oldsmobile has developed these dealer-help departments to the point of near perfection, not only with the "know-how" of a dealer's problems but also with the understanding qualities which are so essential for co-operation.

This, in short, translates itself into profits which are the first requisite of business stability.

With kindest regards, we are

Very truly yours,
SHORE-SEVERS COMPANY
Arthur T. Shore
Arthur T. Shore
Partner

OLDSMOBILE messages in this series are written by the Oldsmobile dealers themselves . . . from east and west, from north and south . . . dealers from all parts of the country. It's more than a coincidence, therefore, that all these messages have carried substantially the same theme: *an expression of appreciation for Oldsmobile's wartime assistance.* They show that Oldsmobile's policy of dealer aid has been *impartial and universal*, extending to dealers in small towns as well as large, to the new dealers as well as to the old.

The men whose letter appears at the left, Arthur T. Shore and Ray M. Severs of Detroit, are typical of the dealers who have written in. They have been with Oldsmobile for over twelve years, yet they are still learning new reasons why Oldsmobile is such a good organization to tie up with. Each year, they find new cause to appreciate what a tremendous amount of individual, personal help Oldsmobile gives its dealers . . . through the medium of an extremely active field force. Each year, they receive new benefit from Oldsmobile's business management program, and Oldsmobile's powerful assistance in service promotion. In years to come, we believe the dealer organization will find even more reason to say, "You can always count on Oldsmobile" . . . wartime, peacetime, any time!

Here are Examples of Other Dealers' Comments

READING, PA.—
"The various programs that you have presented to me have been extremely helpful."
HARVEY GOLDEN

BELLINGHAM, WASH.—
"We look ahead to continued co-operation on the part of the factory, and we believe Oldsmobile to be one of the best franchises a dealer can have."
JAMES ASHE
Ashe Motor Company

FORT WORTH, TEXAS.—
"Through the hearty co-operation of the Zone Office, Business Management and Service Department, we find ourselves more efficiently equipped to handle our business expansion after the war."
D. J. McCARROLL,
McCarrolls, Inc.

HUNTINGTON, PARK CAL.—
"Oldsmobile's program of aid to their dealers both in wartime and peace is basically sound, very practical, and accurately timed to meet the emergency at hand in each dealership."
LESLIE R. LUMLEY



YOU CAN ALWAYS COUNT ON

OLDSMOBILE

AMERICA'S OLDEST
MOTOR CAR
ORGANIZATION!

JUNE, 1945

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Today's volume of engine rebuilding due to the absence of new cars and the need of keeping America on its wheels has caused progressive shops to install Clayborne engine overhaul stands. Get these advantages from your mechanics—**increase their man hours of production:**

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Write for Catalog sheets for more details to:

YOU CAN'T WRESTLE AN ENGINE BLOCK

CLAYBORNE MANUFACTURING CO.

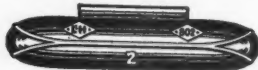
4553 W. Lake Street

Chicago 24, Ill.

STOP UP
THE *Leak*
IN YOUR
BUSINESS!

AS cars are being junked at the rate of A 3000 per day, according to ODT, your repair business will grow smaller and smaller each day unless you do something about it.

You can appreciably lengthen the life of your customers' cars by balancing the wheels, thereby reducing the vibration that causes terrific wear and tear on mechanical parts. It takes little time—and it's a profitable service job.



HARLEY C. LONEY CO.

16893 Wyoming • Detroit 21, Mich.



SEND
for wall chart showing
the pounding effect of
unbalanced wheels.

**WHEEL
BALANCING WEIGHTS**

Remove RUST

BEFORE REFINISHING ...

WITH **METALPREP 79-V**

Using
the simple
3-STEP
method

BRUSH-ON

- Simply apply with special Prep Products Brush to dissolve oils, greases and rust.

SCRUB

- Use steel-wool to complete cleaning operation.

WIPE-OFF

- Remove residue with cloth.

Ask your jobber or write for Bulletin 44-5.

JOBBERS: Add profit with Metalprep.

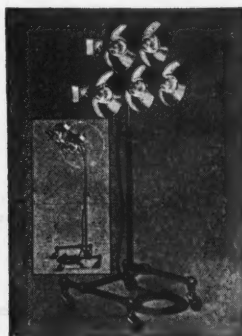


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EXTRA PROFITS in Painting and Touch-up with

**NALCO Infra-Red Ray
Drying Units**



Nalco Infra-Red Ray Drying Equipment cuts drying or baking time to a fraction . . . cuts painting cost and produces a more uniform finish. It eliminates the need for overnight drying on synthetics . . . enables you to deliver a paint job in a matter of hours instead of days.

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THE well known Rimac Valve Spring Tester, for years a highly valued item of shop equipment, is back on the job. Uncle Sam had first call on this finely built, accurate instrument. And incidentally, while satisfying stiff military requirements, our engineers developed ways of making it better than ever—for you!

**RIMAC
SPRING TESTER**

For Valve & Clutch Springs

We are glad to announce that soon we hope to resume deliveries in limited numbers to our Trade. Write for details

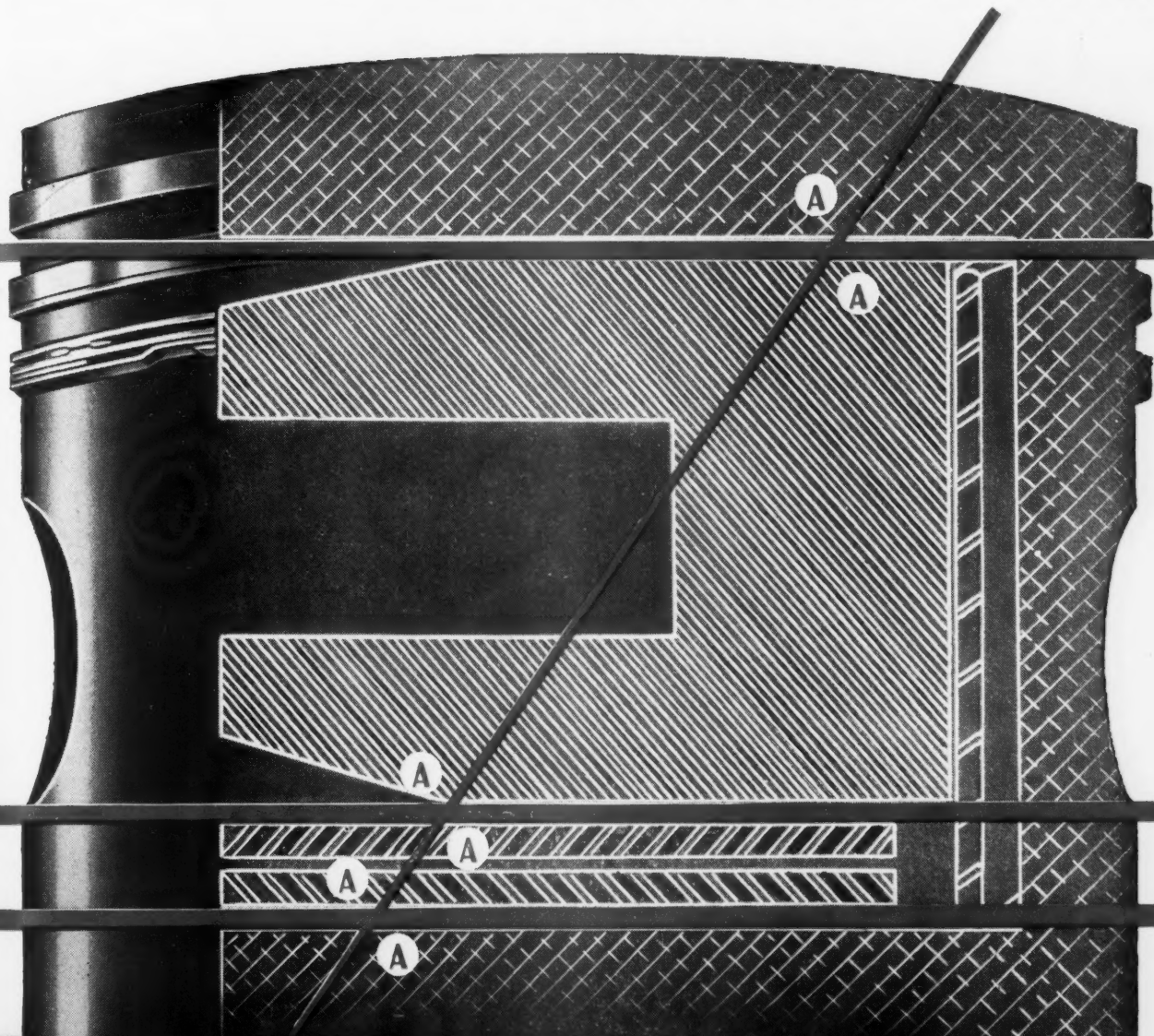
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16 Hudson St., New York 13, N. Y.



Range up to 250 lbs.
PRICE \$40

Unchanged

EXCEPT FOR THE BETTER!



Every Ramco Ring Since '41 ...is Better than Pre-War!

In many ways, Ramco 10-Ups are better than pre-war. Their performance in today's extremely bad oil pumpers proves it.

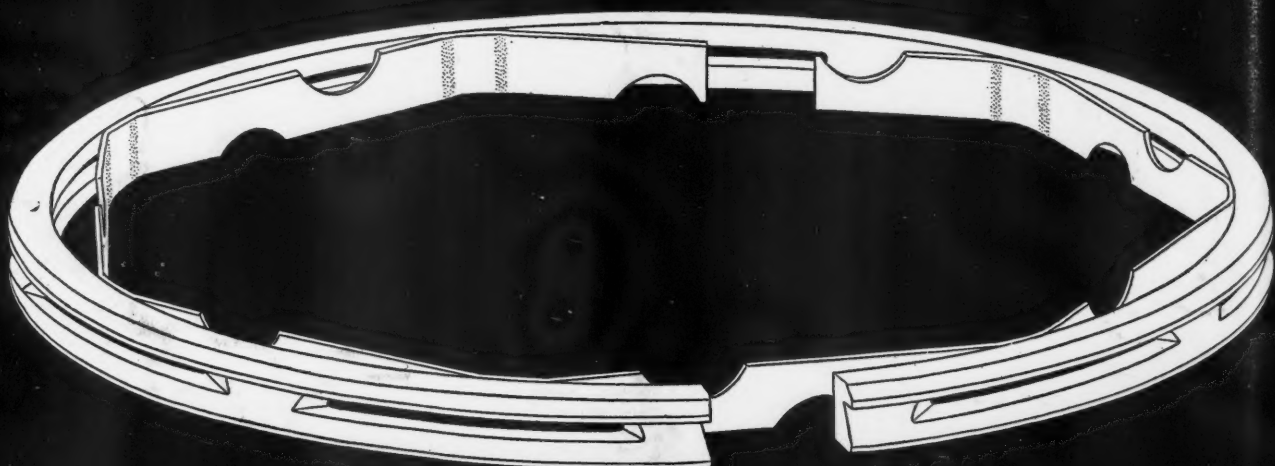
PARALLELISM...is an important example. Precision methods introduced with Ramco aircraft ring manufacture and now utilized in Ramco 10-Up ring production make possible a higher degree of parallelism than ever before! Naturally, the greater the degree of parallelism, the better the seal at the top and bottom of the ring groove.

DO THE JOB RIGHT—RE-POWER with
RAMCO 10up
All-Purpose Piston Rings
For Re-Ring or Re-Bore... the piston rings with the
10,000 MILE RING AND LABOR GUARANTEE

Ramsey Accessories Mfg. Corp., 3718 Forest Park Blvd., St. Louis, Missouri
Factories at St. Louis, Mo.; Fruitport, Michigan; Windsor, Ont.

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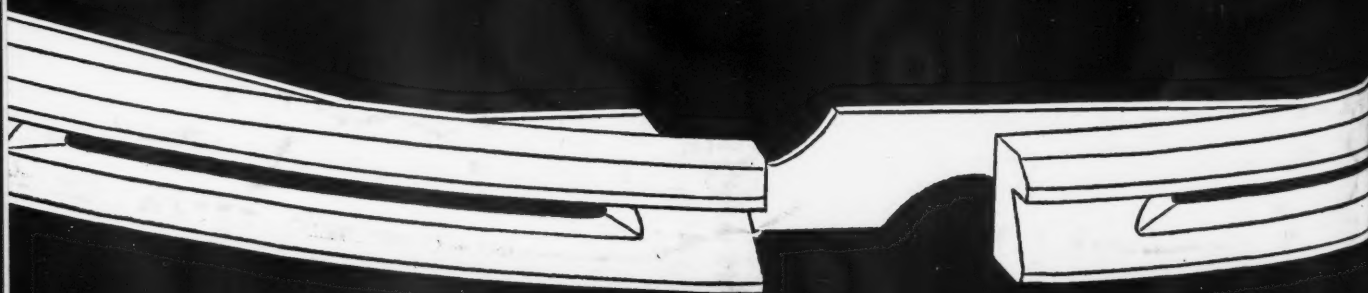
Ring Leaders

Since the earliest days of the automobile, American Hammered has consistently supplied piston rings that are a year or more ahead of the field. One American Hammered development *quadrupled* the flying time between engine overhauls in Allied war planes. Koppers Company, Inc., American Hammered Piston Ring Division, Baltimore, Maryland.

AMERICAN HAMMERED *Flexible OilCutter*

Real oil control means keeping oil out of the combustion chamber and evenly distributing it around

the cylinder where it belongs. That's exactly what the FLEXIBLE OILCUTTER does! Installed with the bevel on top, the FLEXIBLE OILCUTTER rides over the oil film on the up-stroke. Then, on the down-stroke, the sharp lower edge scrapes the oil down the cylinder wall. Wide slots provide excellent drainage and freedom from clogging. The FLEXIBLE OILCUTTER adjusts itself automatically to give maximum oil control with long life—regardless of the amount of oil on the cylinder. There is a FLEXIBLE POWER Set-Up with Flexible OilCutter especially designed for every type of engine...tested on the Proving Grounds of global warfare.



American Hammered Piston Rings

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